

WIRING DIAGRAMS PARTS LISTS

AND
ESSENTIAL SERVICE DATA

PHILCO

REG. U.S. PAT. OFF.

HOME RADIO - - - AUTO RADIO
1928-1937 INCLUSIVE

Models previous to 1937 Models are arranged numerically; 1937 Models are grouped together at the end. Models that have similar chasses, as Models 89 and 19, are placed under a single number insofar as sequence is concerned.

Thus arranged are:

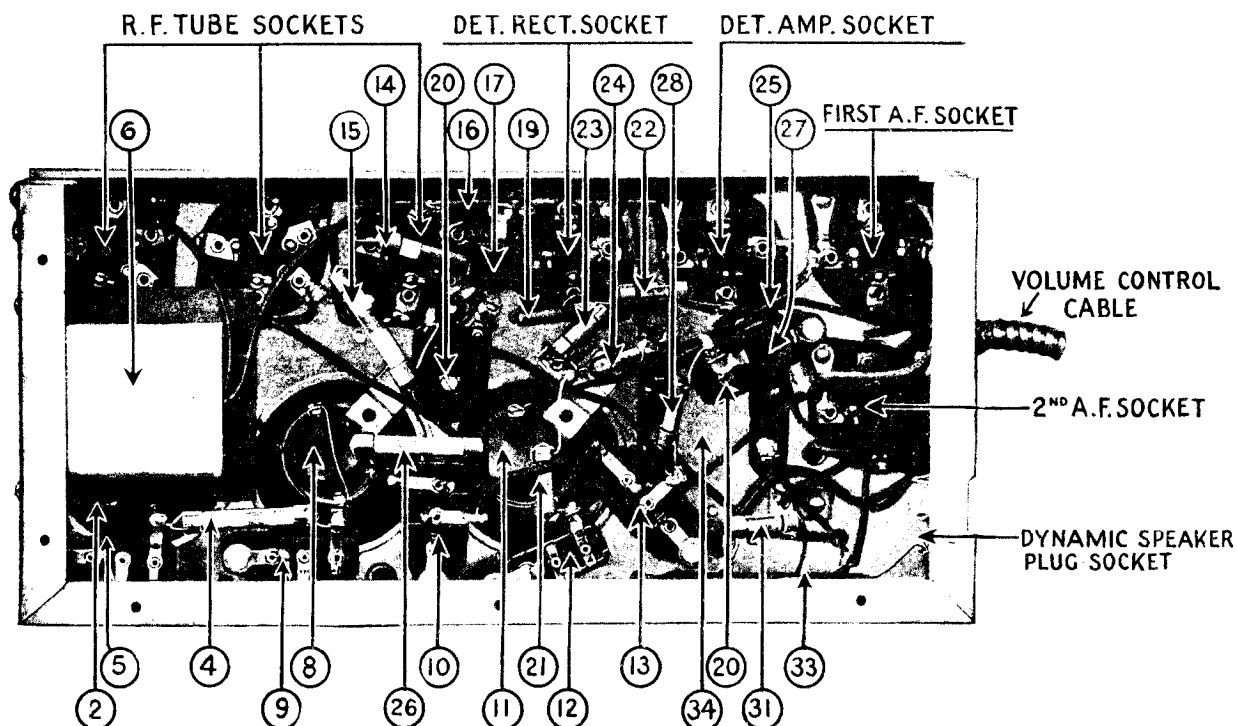
Model 22, see	Model 71	Model 211, see	Model 111	Model 503, see	Model 18
" 23, " "	" 14	" 212, " "	" 112	" 504, " "	" 44
" 24, " "	" 52	" 220, " "	" 20	" 505, " "	" 60
" 25, " "	" 43	" 270, " "	" 70	" 506, " "	" 144
" 26, " "	" 89	" 296, " "	" 96	" 507, " "	" 118
" 27, " "	" 19	" 500-501, " "	" 16	" 509, " "	" 201

Especially Prepared for
Members of



INDICATES GROUNDED SHIELDING

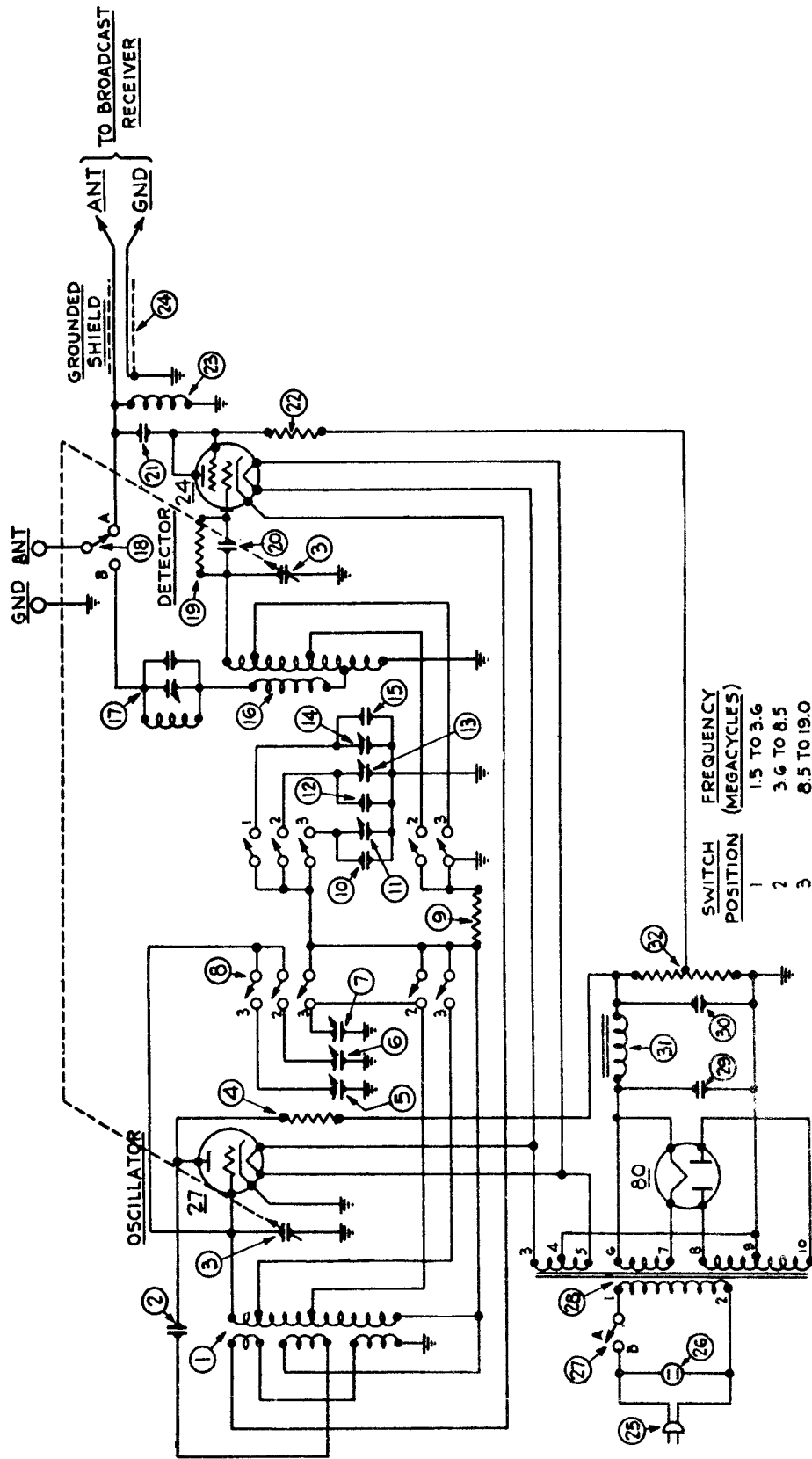
Model 3



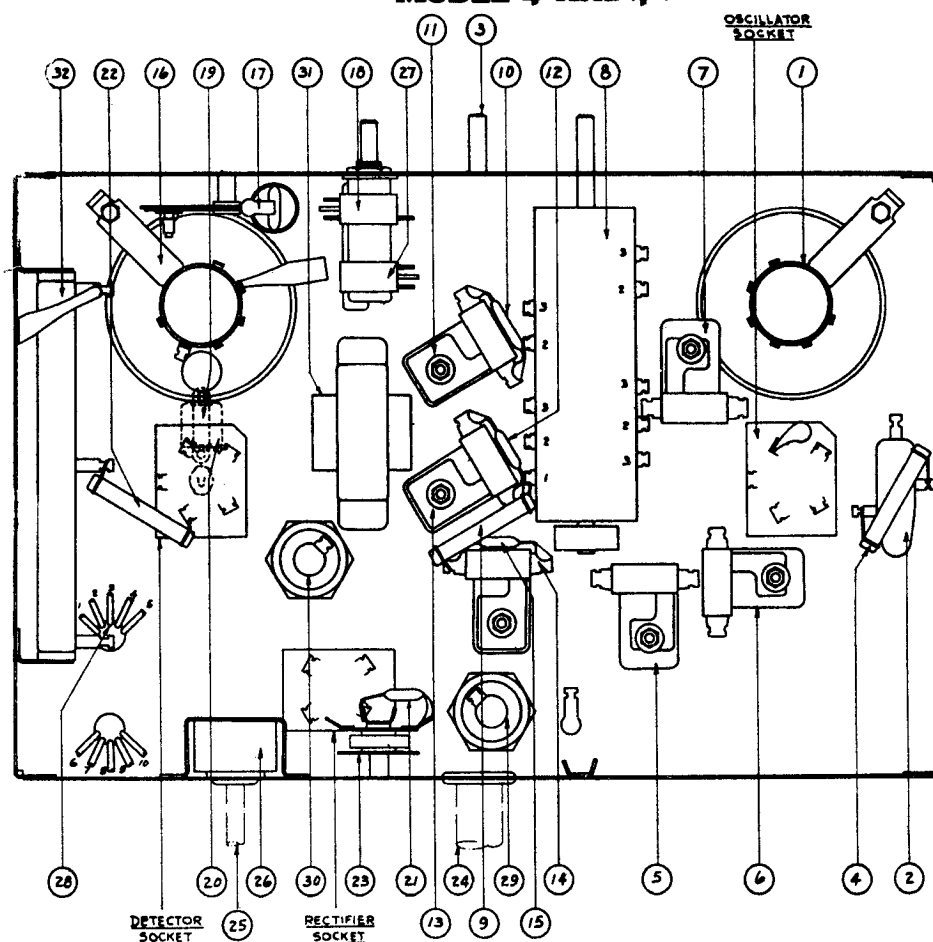
REPLACEMENT PARTS—MODEL 3 TRANSITONE RECEIVERS

No. on Figs. 1 and 2	Description	Part No.	Description	Part No.
①	Resistor (10,000 ohms— $\frac{1}{2}$ watt)	4412	Speaker Plug and Cable	L-1163-A
②	First R. F. Transformer	4401-A	Battery Connector Plug	2802
③	Tuning Condenser	4372-A	Battery Plug Receptacle	4406
④	Resistor (100,000 ohms—1 watt)	3767	224 Socket	4416
⑤	Condenser (.05 mfd)	3615-N	171-A Socket	4415
⑥	Condenser (1.0 mfd)	4419	201-A Socket	4415
⑦	Condenser (.25 mfd)	4487	"B" Battery Compartment	4465
⑧	Second R. F. Transformer	4401-B	Battery Box Lid	4467
⑨	Condenser (.05 mfd)	3615-N	Screws (Housing)	W-274-A
⑩	Condenser and Resistor (.05 mfd with 250 ohms)	3615-P	Lock Washers	W-291
⑪	Third R. F. Transformer	4401-B	Knobs	4523
⑫	Condenser (.05 mfd)	3615-N	Flexible Condenser Drive Shaft	4505
⑬	Condenser and Resistor (.05 mfd with 250 ohms)	3615-C	Dial Insulator for Volume Control	4461
⑭	Resistor (50,000 ohms—1 watt)	4237	Distributor Resistor	4546
⑮	Resistor (25,000 ohms—1 watt)	3656	Spark Plug Resistor	4531
⑯	Resistor (4-section)	4407	Volume Control Housing	4541
⑰	Condenser (.00025 mfd)	3082	Bezel Plate	4443
⑱	Fourth R. F. Transformer	3775-B	Dial	4461
⑲	Condenser (.00005 mfd)	3774	Fuse Holder	4593
⑳	R. F. Choke	3256-A	Gear Wheel	4385
㉑	Resistor (1,000,000 ohms— $\frac{1}{2}$ watt)	4409	Set Screws	W-520
㉒	Resistor (250,000 ohms— $\frac{1}{2}$ watt)	4410	Drive Shaft Coupling	4434
㉓	Resistor (100,000 ohms— $\frac{1}{2}$ watt)	4411	Cover Plate (Comp. Cond.)	4427
㉔	Resistor (100,000 ohms— $\frac{1}{2}$ watt)	4411	Cover Plate (Front)	4374
㉕	Condenser (.00025 mfd)	3082	Dial Pinion Shaft	4387
㉖	Resistor (1,000,000 ohms—1 watt)	4414	Dial Drive Pinion	4386
㉗	Condenser (.00025 mfd)	3082	Worm	4370
㉘	Resistor (100,000 ohms— $\frac{1}{2}$ watt)	4411	Worm Shaft	4383
㉙	Condenser (.015 mfd)	3793-D	Ball (Worm Adj.)	4475
㉚	Volume Control	4463	Side Gasket	4472
㉛	Resistor (250,000 ohms— $\frac{1}{2}$ watt)	4410	Bottom Gasket	4473
㉜	Condenser (.25 mfd)	4487	Side Gasket	4477
㉝	Resistor (2-section)	4408	Condenser Shaft Gasket	4478
㉞	Audio Transformer	3241	Sub-Base Gasket	4479
㉟	Condenser (2.0 mfd)	4418	Top Gasket	4480
㊱	Audio Choke	4485	Parting Gasket	4481
㊲	Output Condenser (1.0 mfd)	4420	Shield Gasket	4483
㊳	Output Transformer	2706	Cover Gasket	4484
㊴	Voice Coil and Cone	2769-B	Tube-Side Gasket	4488
㊵	Field Coil	2707	Interference Condenser	4522
㊶	Fuse	4540	Nuts (Control Panel)	W-434
㊷	Lock Switch (With Keys)	4462	Front Cover	4470
㊸	Pilot Lamp	4567	B Cable	L-1160-A
			A Cable	L-1169-A
			Battery Box Coupling	4524
			Battery Cable and Plug	L-1164-A
			Volume Control Cable Housing	4541
			Rubber Sleeving	4537
			Pilot Lamp Assembly	4391-A
			Fibre Wrench	3164

MODEL 4 AND 4 C



MODEL 4 AND 4C



REPLACEMENT PARTS

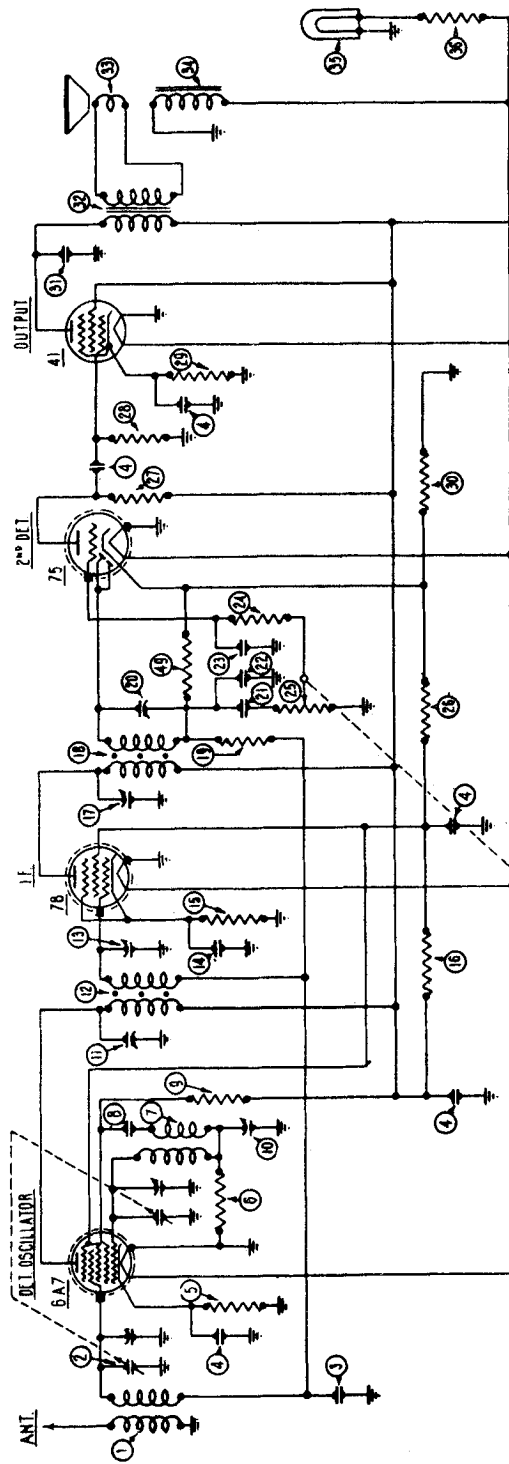
MODELS 4 AND 4C

No. on Figs. 1 and 2	Description	Part No.
①	Oscillator Coil	03734*
②	By-pass condenser (.05 mfd.)	3615-M
③	Gang condenser	03692
④	Resistor (13,000 ohms)	3766
⑤	Compensating condenser (19 MC end of top scale)	04000-E
⑥	Compensating condenser (8.5 MC end of center scale)	04000-E
⑦	Compensating condenser (3.6 MC end of bottom scale)	04000-E
⑧	Frequency control switch	03751
⑨	Resistor (240,000 ohms)	3768
⑪	Condenser (1800 mmf.)	6018
⑬	Condenser (800 mmf.)	5878
⑭	Compensating condenser (3.6 MC end of center scale)	04000-F
⑯	Compensating condenser (1.5 MC end of bottom scale)	04000-F
⑰	Condenser (250 mmf.)	3082
⑱	Detector transformer	03734*
⑲	Frequency filter	03662

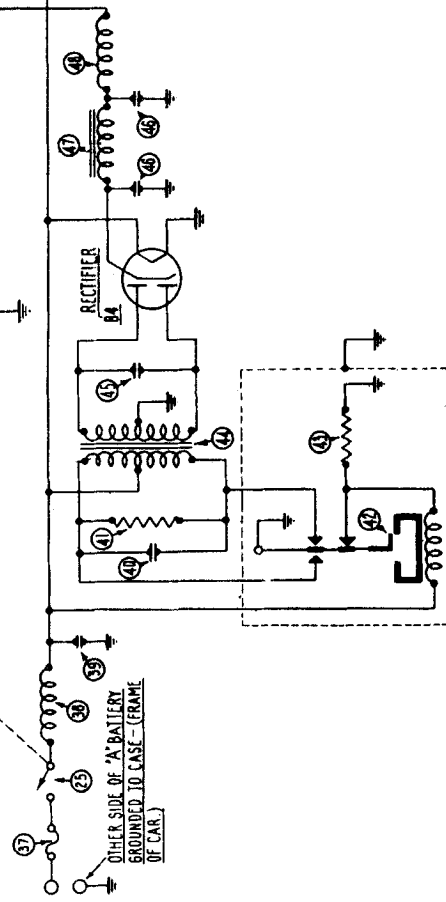
No. on Figs. 1 and 2	Description	Part No.
⑫	Antenna switch (assembled with 27)	5796
⑬	Resistor (2 Megohms) assembled with (20)	03879
⑭	Condenser (110 mmf.) assembled with (19)	03879
⑮	Condenser (250 mmf.)	3082
⑯	Resistor (99,000 ohms)	3767
⑰	R. F. choke	03893
⑱	Shielded cable	L-1278
⑲	Power cord and plug	L-943-A
⑳	Outlet receptacle	5439
㉑	"On-Off" switch (assembled with 18)	5796
㉒	Power transformer—50-60 cycles	5785
	25-40 cycles	5786
㉓	Electrolytic condenser (6 mfd.)	4916
㉔	Electrolytic condenser (6 mfd.)	4916
㉕	Filter choke (50-60 cycles)	4951
	Filter choke (25-40 cycles)	5930
㉖	B.C. resistor (4750 each side of center), 50-60 cycles	5783
	Resistor (two 32,000 ohms), 25-40 cycles	3525
	Bezel	5175
	Cabinet	40600

*Includes matched oscillator coil and detector transformer.

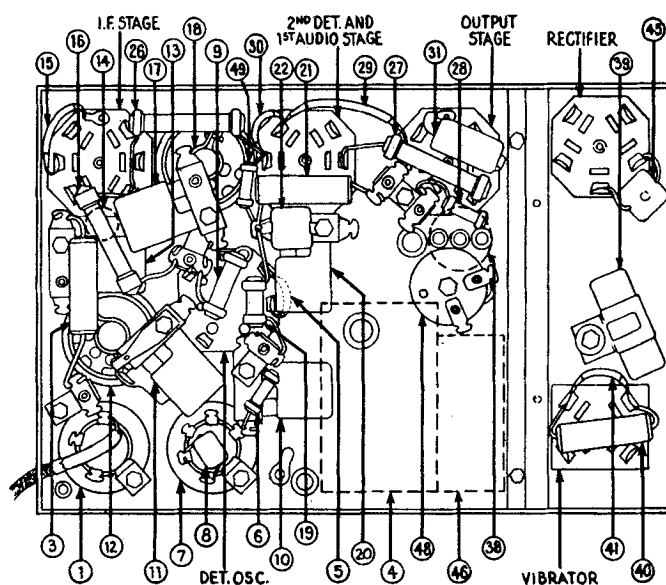
MODEL 5



MODEL 5



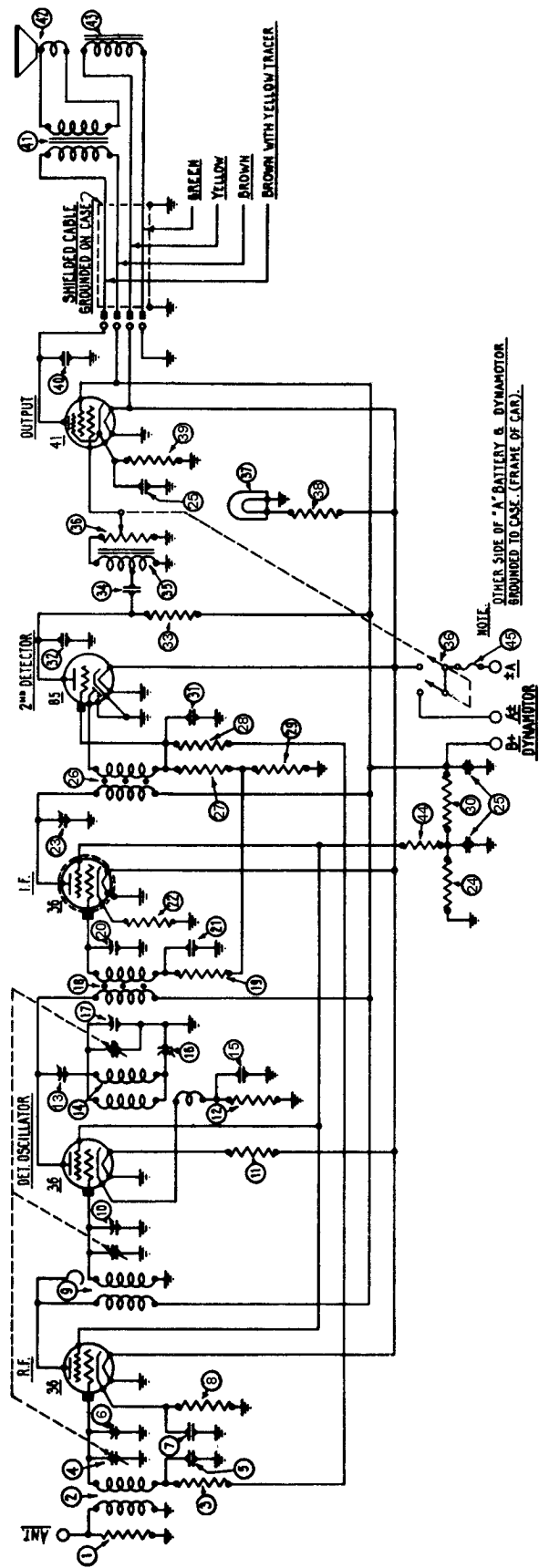
MODEL 5



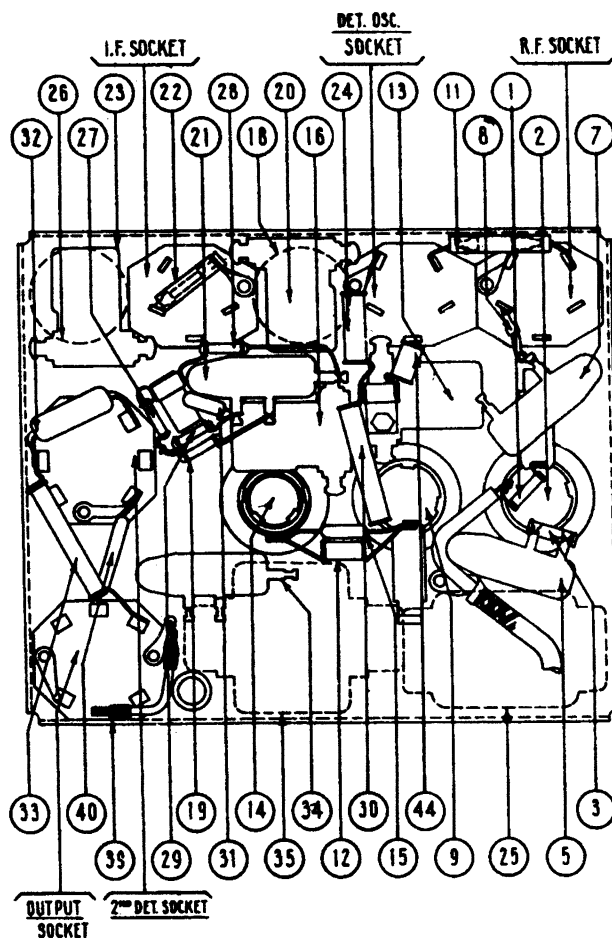
MODEL 5 PARTS LIST

No. on Fig. 1 and 2	Description	Part No.	No. on Fig. 1 and 2	Description	Part No.
1	Antenna Transformer	32-1084	38	R. F. Choke (Low voltage)	32-1083
2	Tuning Condenser	31-1019	39	Condenser (.5 mfd.)	30-4015
3	Condenser (.05 mfd.)	30-4020	40	Condenser (.05 mfd.)	30-4020
4	Filter Condenser (.25; .25; .5; 20 mfd.)	30-4017	41	Resistor (200 ohms)	7217
5	Resistor (200 ohms)	7217	42	Vibrator	38-5036
6	Resistor (1300 ohms)	8267	43	Resistor (200 ohms)	7217
7	Oscillator Coil	32-1085	44	Transformer	32-7030
8	Condenser (.00025 mfd.)	3082	45	Condenser (.006 mfd.)	30-1002
9	Resistor (15,000 ohms)	6208	46	Condenser (4 mfd.; 8 mfd.)	30-4010
10	Padder	04000-S	47	Filter Choke	32-7026
11	Padder	04000-J	48	R. F. Choke (High voltage)	32-1078
12	First I. F. Transformer	32-1086	49	Resistor (250,000 ohms)	4410
13	Padder	04000-Y		Control Shaft (Tuning)	28-8006
14	Condenser (.5 mfd.)	30-4018		Control Shaft (Volume)	28-8007
15	Resistor (1,000 ohms)	33-3017		Tube Kit	34-3006
16	Resistor (10,000 ohms)	4412		75 Tube	8002
17	Padder	04000-D		78 Tube	8315
18	Second I. F. Transformer	32-1087		41 Tube	6446
19	Resistor (1,000,000 ohms)	4409		84 Tube	34-2001
20	Padder	04000-M		6A7 Tube	34-2002
21	Condenser (.05 mfd.)	30-4020		Dial	27-5006
22	Condenser (.00025 mfd.)	3082		Antenna Lead	L-1594
23	Condenser (.0005 mfd.)	3910		Battery Cable (Bat. end)	38-5124
24	Resistor (100,000 ohms)	6099		Battery Cable (Rec. end)	38-5123
25	Volume Control and Switch	33-5009		Fuse Housing	28-1269
26	Resistor (32,000 ohms)	3525		Male Cap (Fuse)	28-1270
27	Resistor (250,000 ohms)	3768		Contact (Fuse)	27-7133
28	Resistor (500,000 ohms)	6097		Washer	27-7132
29	Resistor (700 ohms)	6443		Spring	28-8009
30	Resistor (400 ohms)	33-3016		Fuse Insulator	27-7131
31	Condenser (.006 mfd.)	30-1002		Antenna Male Cap	28-1270
32	Output Transformer	32-7005		Contact (Antenna)	28-7133
33	Cone	36-3027		Spark Plug Resistors	4531
34	Field Coil	9013		Dist. Resistors	4546
35	Pilot Lamp	6608		Screw Type	4851
36	Resistor (7 ohms)	7155		Interference Condenser (1 mfd.)	4522
37	Fuse, 15 A.	7227		Interference Condenser (1/2 mfd.)	30-4007

MODEL 6



MODEL 6

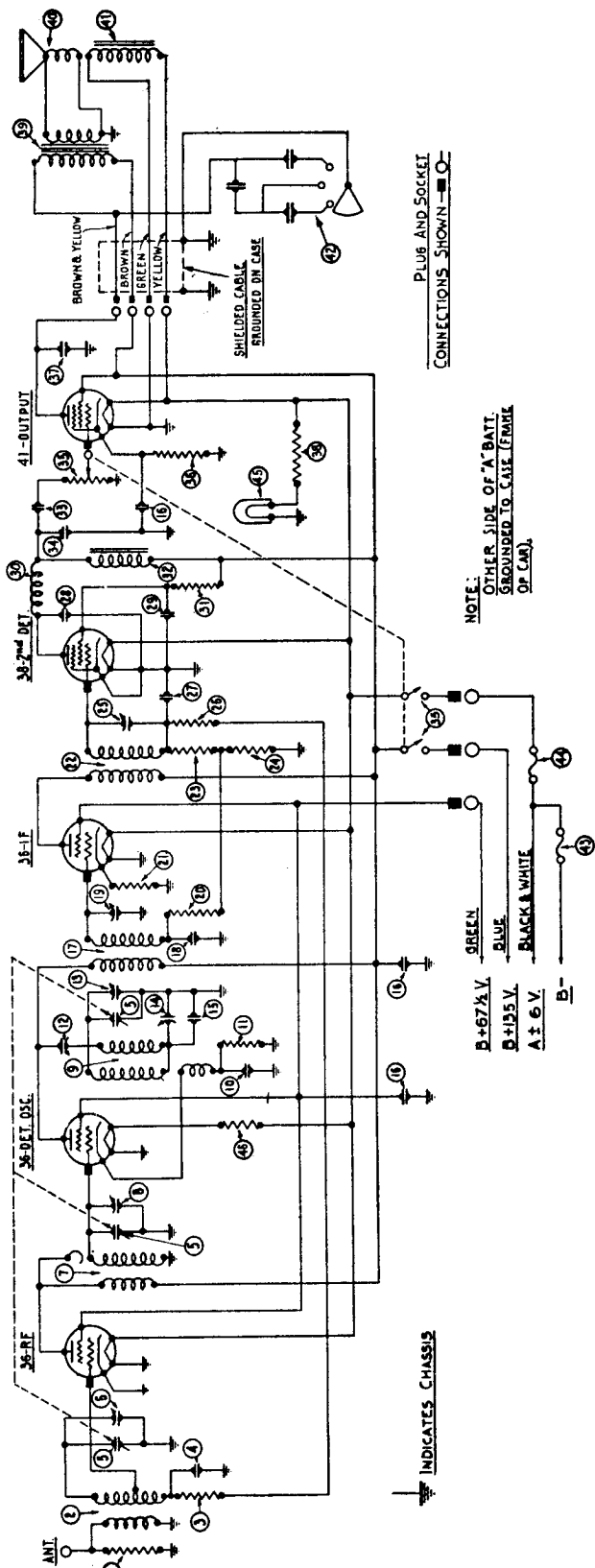


PARTS LIST

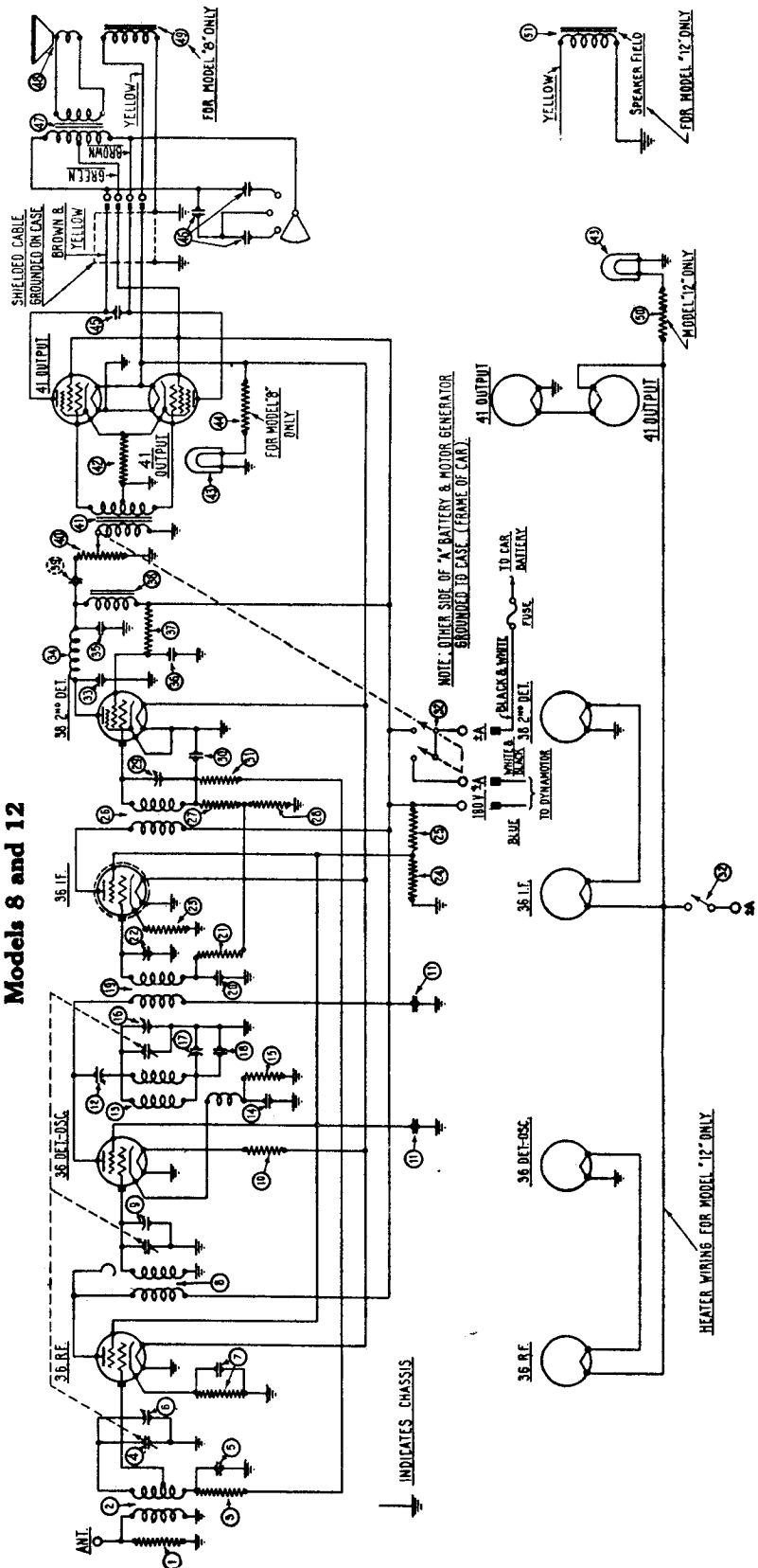
No. in Figs. 1 and 2	Description	Part No.
①	Resistor (5,000 ohm) . . .	6096
②	Antenna Coil	05903
③	Resistor (100,000 ohm) . .	6099
④	Tuning Condenser	04308
⑤	By-pass Condenser (.05 mfd.)	3615-AN
⑥	Compensator section on tuning condenser . . .	
⑦	By-pass Condenser (.05 mfd.)	3615-AT
⑧	Resistor (500 ohm)	6977
⑨	Detector Coil	05902
⑩	Compensator section on tuning condenser . . .	
⑪	Resistor (2.7 ohm)	6511
⑫	Resistor (8,000 ohm) . . .	5838
⑬	Compensating Cond. . . .	04000A
⑭	Oscillator Coil	05975
⑮	Condenser (.007 mfd.) . .	4520
⑯	Compensating Cond. . . .	04000S
⑰	Compensator section on tuning condenser . . .	
⑱	First I. F. Trans- former	05970
⑲	Resistor (500,000 ohm) . .	6097
⑳	Compensating Cond. . . .	04000D
㉑	Condenser (.05 mfd.)	3615-AK
㉒	Resistor (500 ohm)	6977
㉓	Compensating Cond. . . .	04000D
㉔	Resistor (20,000 ohm) . .	6650
㉕	Condenser (.25 mfd., .5 mfd., 8 mfd.)	04354
㉖	Second I. F. Trans- former	05901
㉗	Resistor (100,000 ohm) . .	6099
㉘	Resistor (500,000 ohm) . .	6097
㉙	Resistor (100,000 ohm) . .	6099
㉚	Resistor (20,000 ohm) . .	6649
㉛	Condenser (.00025 mfd.)	3082
㉜	Condenser (.0002 mfd.) . .	4059
㉝	Resistor (50,000 ohm) . .	4237
㉞	Condenser (.09 mfd.) . .	4989-Y
㉟	Audio Transformer	7535

No. in Figs. 1 and 2	Description	Part No.
㊱	Volume Control (500,000 ohm) and switch	7525
㊲	Pilot Lamp	4567
㊳	Resistor (7 ohm)	5110
㊴	Resistor (700 ohm)	6443
㊵	Condenser (.002 mfd.) . .	6853
㊶	Output Transformer	2598
㊷	Cone and Coll.	02823
㊸	Field Coil	02794
㊹	Resistor (25,000 ohm) . .	4516
㊺	Interstage Shield	05910
㊻	Dynamotor EB	05389
㊼	Dynamotor EA (for bat- tery replacements) . . .	05388
㊽	Receiver Studs	6122
㊾	Shielded Loom (18" high tension shield)	L1387
㊿	Shielded Loom (30" high tension shield)	L1386
1	Spark Plug Resistor	4531
2	Distributor Resistor	4546
3	Screw Type Resistors . . .	4851
4	Interference Condensers .	4522
5	Knobs	5166
6	Speaker Extension Cable	02984
7	Dynamotor Filter Choke	6658
8	Dynamotor Filter Con- denser (large unit)	0538
9	Dynamotor Filter Con- denser (small unit)	05724
10	Dynamotor RF Choke (small unit only)	05746
11	18" Volume Control Shaft	6351
12	18" Tuning Control Shaft	6352
13	32" Volume Control Shaft	6128
14	32" Tuning Control Shaft	6129
15	48" Volume Control Shaft	6298
16	48" Tuning Control Shaft	6299
17	120" Volume Control Shaft	6355
18	120" Tuning Control Shaft	6356
19	Philco Oscillator (for ad- justing Models 3, 7, 8, 6)	Model 095
20	Fibre Wrench	3164

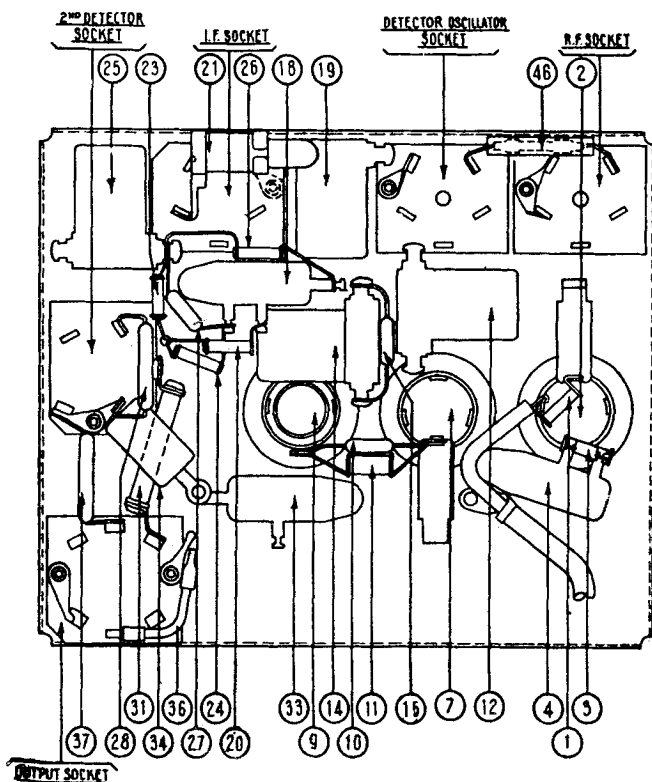
Model 7



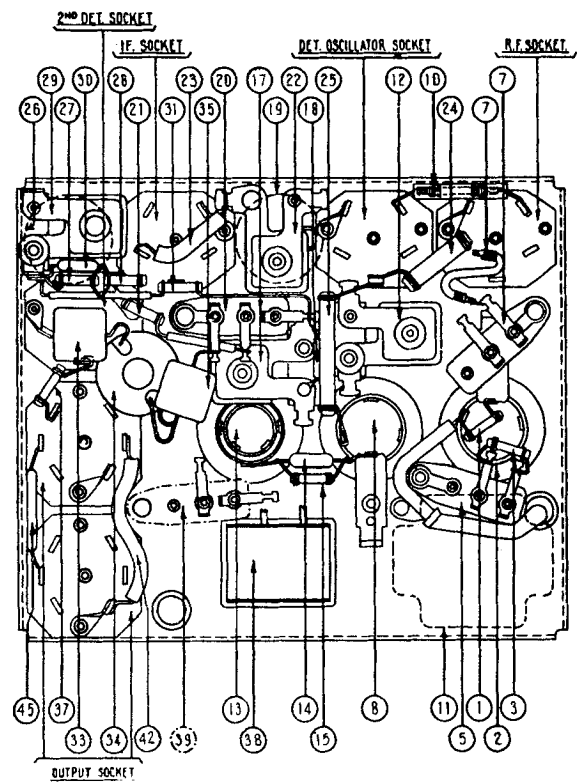
Models 8 and 12



Model 7



Models 8 and 12

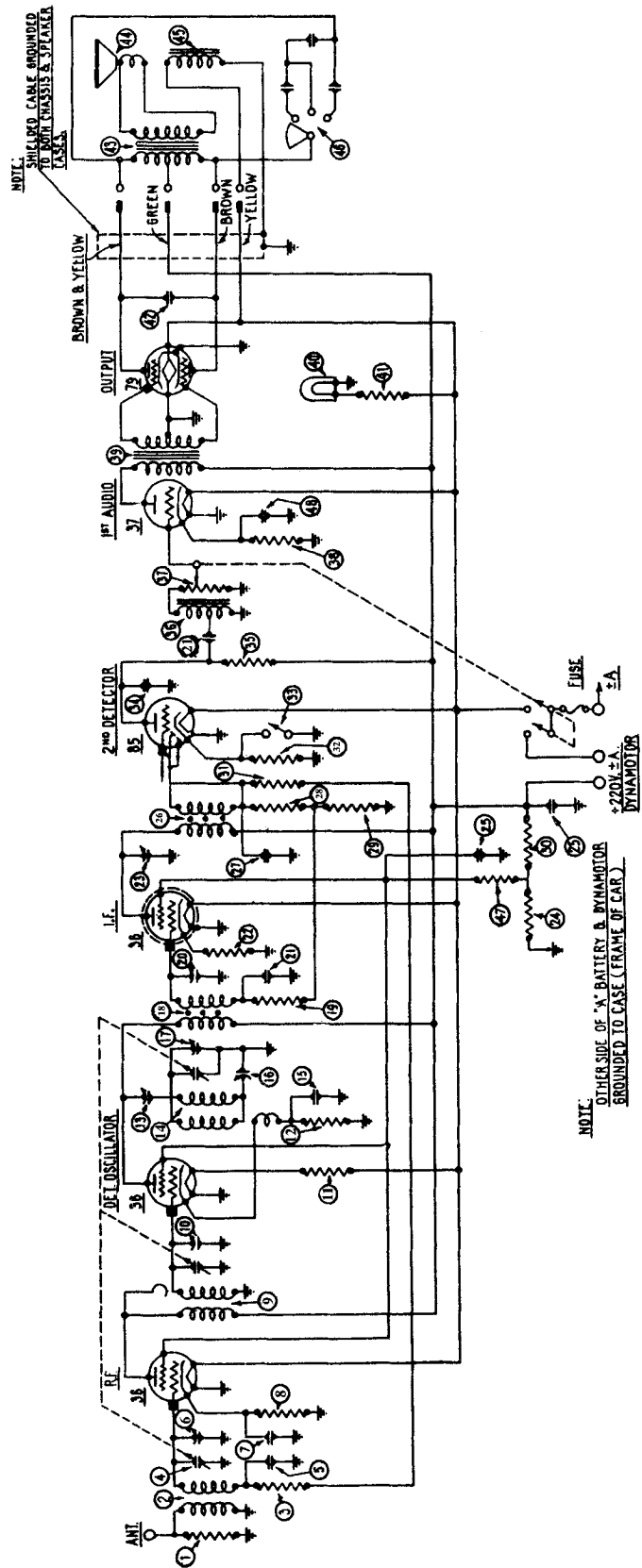


Replacement Parts Models 7, 8 and 12

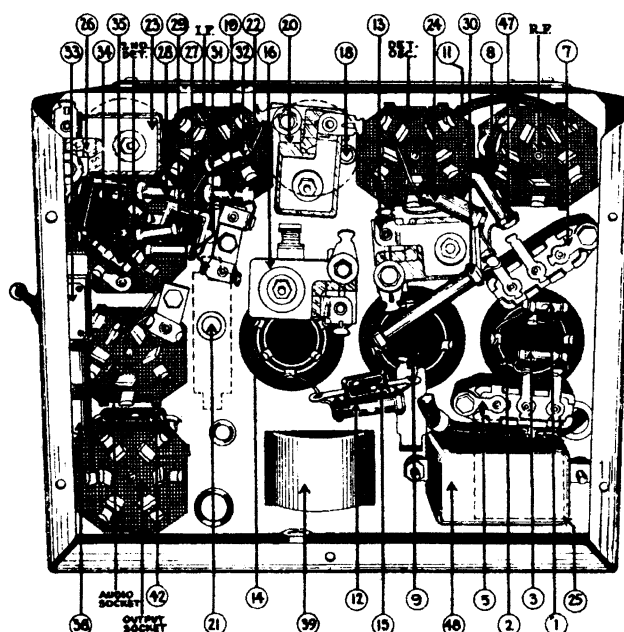
Models 8-12	Model 7	Description	Part No.	Models 8-12	Model 7	Description	Part No.
①	①	Resistor (5,000 Ohms).....	8096	⑮	④	Pilot Lamp.....	4567
②	②	Antenna Coil.....	04348	⑯	⑤	Resistor (7 Ohms).....	5110
③	③	Resistor (99,000 Ohms).....	8099	⑰	⑥	Condenser (.002 Mfd.).....	5563
④	④	Tuning Condenser Assembly.....	04308	⑱	⑦	Tone Control.....	05386
⑤	⑤	Condenser (.05 Mfd.).....	3615-AG	⑲	⑧	Output Transformer.....	2565
⑥	⑥	Condenser (.05 Mfd.).....	3615-AN	⑳	⑨	Output Transformer.....	2566
⑦	⑦	Compensating Cond. (Part of Tuning Condenser).....	3615-AE	㉑	⑩	Cone and Voice Coil.....	02823
⑧	⑧	Resistor (500 Ohms).....	8977	㉒	⑪	Field Coil Assembly (6V).....	02794
⑨	⑨	Detector Transformer.....	04509	㉓	⑫	Resistor (30 Ohms).....	7155
⑩	⑩	Compensating Cond. (Part of Tuning Condenser).....	04509	㉔	⑬	1 Amp. Fuse.....	4540
⑪	⑪	Resistor (2.7 Ohms).....	6511	㉕	⑭	10 Amp. Fuse.....	5676
⑫	⑫	Condenser (.25, 5 Mfd.).....	04959	㉖	⑮	15 Amp. Fuse.....	7227
⑬	⑬	See Note 1 (.25, .25, 5 Mfd.).....	05622	㉗	⑯	Field Coil Assembly (12V).....	02688
⑭	⑭	Condenser (.25, 5, 20 Mfd.).....	04354	㉘	⑰	Battery Cable (Model 7).....	04416
⑮	⑮	Compensating Condenser.....	04000-A	㉙	⑱	Battery Cable (Model 8-12).....	04419
⑯	⑯	Oscillator Coil.....	04508	㉚	⑲	Plug (Model 7).....	4539
⑰	⑰	Condenser (.0007 Mfd.).....	4520	㉛	⑳	Cap (Model 7).....	4585
⑱	⑱	Resistor (5,000 Ohms).....	8096	㉜	㉑	Plug (Model 8).....	7122
⑲	⑲	Compensating Cond. (Part of Tuning Condenser).....	04000-R	㉝	㉒	Cap (Model 8).....	7123
⑲	⑲	Condenser (.0007 Mfd.).....	5863	㉞	㉓	Fibre Wrench.....	3104
⑲	⑲	First I.F. Transformer.....	04352	㉟	㉔	Control Unit Assembly.....	04343
⑲	⑲	Condenser (.05 Mfd.).....	3615-AK	㊱	㉕	Control Housing Cover.....	8030
⑲	⑲	Resistor (490,000 Ohms).....	8097	㊲	㉖	Key (Interchangeable).....	8091
⑲	⑲	Compensating Condenser.....	04000-D	㊳	㉗	Speaker Extension Cable.....	02984
⑲	⑲	Resistor (500 Ohms).....	9042	㊴	㉘	Spark Plug Resistor.....	4531
⑲	⑲	Resistor (225 Ohms).....	6107	㊵	㉙	Distributor Head Resistor.....	4546
⑲	⑲	Resistor (20,000 Ohms).....	6650	㊶	㉚	Special Resistor (Screw Type).....	4581
⑲	⑲	Resistor (20,000 Ohms).....	6649	㊷	㉛	Interference Condenser.....	4522
⑲	⑲	Second I.F. Transformer.....	04353	㊸	㉜	Philco I. F. Oscillator.....	095
⑲	⑲	Resistor (99,000 Ohms).....	8099	㊹	㉝	Type 36 Tube.....	5582
⑲	⑲	Resistor (99,000 Ohms).....	8099	㊺	㉞	Type 38 Tube.....	5584
⑲	⑲	Compensating Condenser.....	04000-A	㊻	㉟	Type 41 Tube.....	6446
⑲	⑲	Condenser (.00025 Mfd.).....	3082	㊼	㊱	Knobs.....	5166
⑲	⑲	Resistor (490,000 Ohms).....	8097	㊽	㊲	Receiver Housing.....	8058
⑲	⑲	Switch (See Note 2).....	5886	㊾	㊳	Speaker Housing.....	2710
⑲	⑲	Condenser (.00125 Mfd.).....	5215	㊿	㊴	Dynamotor Complete—Model EA.....	05388
⑲	⑲	Condenser (.001 Mfd.).....	5215	㊿	㊵	Dynamotor Complete—Model EC.....	05424
⑲	⑲	R.F. Choke.....	04342	㊿	㊶	Dynamotor Only 6V.....	6651
⑲	⑲	Condenser (.00125 Mfd.).....	5886	㊿	㊷	Dynamotor Only 12V.....	7165
⑲	⑲	Condenser (.001 Mfd.).....	5215	㊿	㊸	Dynamotor Filter Choke.....	6658
⑲	⑲	Condenser (.25 Mfd.) See Note 3.....	04360	㊿	㊹	Dynamotor Filter Condenser.....	05396
⑲	⑲	Resistor (50,000 Ohms).....	8098	㊿	㊺	Dynamotor Housing.....	6655
⑲	⑲	Resistor (50,000 Ohms).....	4237	㊿	㊻	Large Battery Box (Complete).....	04585
⑲	⑲	Audio Choke.....	6602	㊿	㊼	Small Battery Box (Complete).....	04581
⑲	⑲	Audio Choke.....	5900	㊿	㊽	Receiver Studs.....	6122
⑲	⑲	Condenser (.01 Mfd.).....	3903-Y	㊿	㊾	Shielded Loom.....	L-1387
⑲	⑲	Volume Control (Note 2).....	7322	㊿	㊿	18" Volume Control Shaft.....	6851
⑲	⑲	Volume Control.....	6109	㊿	㊿	18" Tuning Control Shaft.....	6352
⑲	⑲	Input Transformer.....	6582	㊿	㊿	32" Volume Control Shaft.....	6128
⑲	⑲	Resistor (700 Ohms).....	6443	㊿	㊿	32" Tuning Control Shaft.....	6129
				㊿	㊿	48" Volume Control Shaft.....	8296
				㊿	㊿	48" Tuning Control Shaft.....	8299
				㊿	㊿	120" Volume Control Shaft.....	6355
				㊿	㊿	120" Tuning Control Shaft.....	6356

NOTE 1—In some Receivers, 04959 is replaced by 05622. ③ is omitted and a .25 Mfd. section of 05622 is used in its place.
NOTE 2—Switch ②, in fig. 4 is integral part of volume control ④, part No. 7322.

MODEL 9



MODEL 9

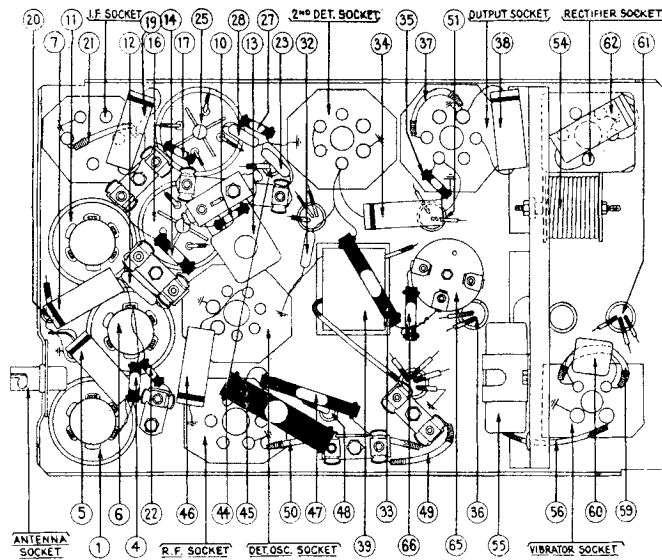


PARTS LIST

No. in Figs. 1 and 2	Description	Part No.	No. in Figs. 1 and 2	Description	Part No.
①	Resistor (5,000 ohm).....	6096	④	Speaker Coil and Cone	02823
②	Antenna Coil	08574	⑤	Speaker Field Pot.....	02795
③	Resistor (100,000 ohm).....	6099	⑥	Tone Control	05366
④	Tuning Condenser	04308	⑦	Resistor (25,000 ohm).....	4516
⑤	By-pass Condenser (.05 mfd.)	3615-AN	⑧	Condenser	7774
⑥	Compensator section on tuning condenser..			Complete Speaker Assembly (Model 6)	A-4
⑦	By-pass Condenser 3615-AY			Complete Speaker Assembly (Model 7)	A-4
⑧	Resistor (500 ohm).....	6977		Complete Speaker Assembly (Model 8)	A-5
⑨	R. F. Transformer	05902		Complete Speaker Assembly (Model 9)	A-7
⑩	Compensator section on tuning condenser ..			Complete Speaker Assembly (Model 12)	A-6
⑪	Resistor (2.7 ohm).....	6511		Complete Speaker Assembly (Model B-6)	A-8
⑫	Resistor (5,000 ohm).....	7352		Inter-stage Shield	05910
⑬	Compensator	04600-A		Dynamotor ED	06084
⑭	Oscillator Coil	05975		Dynamotor EA (for bat- tery replacements) ..	05388
⑮	Condenser (.0007 mfd.).....	04520		Receiver Studs	6122
⑯	Compensating Cond. 04000-S			Shielded Loom (18" high tension shield)	L-1387
⑰	Compensator section on tuning condenser ..			Shielded Loom (30" high tension shield)	L-1386
⑱	First I. F. Trans- former	05970		Spark Plug Resistor	4531
⑲	Resistor (500,000 ohm).....	6097		Distributor Resistor	4546
⑳	Compensating Cond. 04000-D			Screw Type Resistor	4851
㉑	Condenser (.05 mfd., .15 mfd.)	06091		Interference Condensers ..	4522
㉒	Resistor (500 ohm).....	6977		Knobs	5166
㉓	Compensating Cond. 04000-D			Speaker Extension Cables	02984
㉔	Resistor (20,000 ohm).....	6650		Dynamotor Filter Choke ..	6658
㉕	Condenser (.5 mfd., .25 mfd.)	06088		Dynamotor Filter Con- denser (large unit) ..	05386
㉖	Second I. F. Trans- former	05901		Dynamotor Filter Con- denser (small unit) ..	05724
㉗	Condenser (.00025 mfd.)	3082		Dynamotor RF Choke	05723
㉘	Resistor (100,000 ohm).....	6099		Battery Cable	05419-D
㉙	Resistor (100,000 ohm).....	6099		18" Volume Control Shaft	6351
㉚	Resistor (20,000 ohm).....	6649		18" Tuning Control Shaft	6352
㉛	Resistor (500,000 ohm).....	6097		32" Volume Control Shaft	6128
㉜	Resistor (5,000 ohm).....	6096		32" Tuning Control Shaft	6129
㉝	Switch	5462		48" Volume Control Shaft	6298
㉞	Condenser (.00125 mfd.)	5886		48" Tuning Control Shaft	6299
㉟	Resistor (50,000 ohm).....	4518		120" Volume Control Shaft	6355
㊱	Audio Transformer.....	7552		120" Tuning Control Shaft	6356
㊲	Volume Control	7525		Philco Oscillator (for ad- justing Models 3, 6, 7, 8, 9) ..	095
㊳	Resistor (2,500 ohm).....	7775		Fibre Wrench	3164
㊴	Input Transformer	7652			
㊵	Pilot Lamp	4567			
㊶	Resistor (7 ohm).....	5110			
㊷	Condenser (.06 mfd.).....	6359			
㊸	Output Transformer	2515			

NOTE:- OTHER SIDE OF BATTERY GROUNDED TO CASE (FRAME OF CAR).

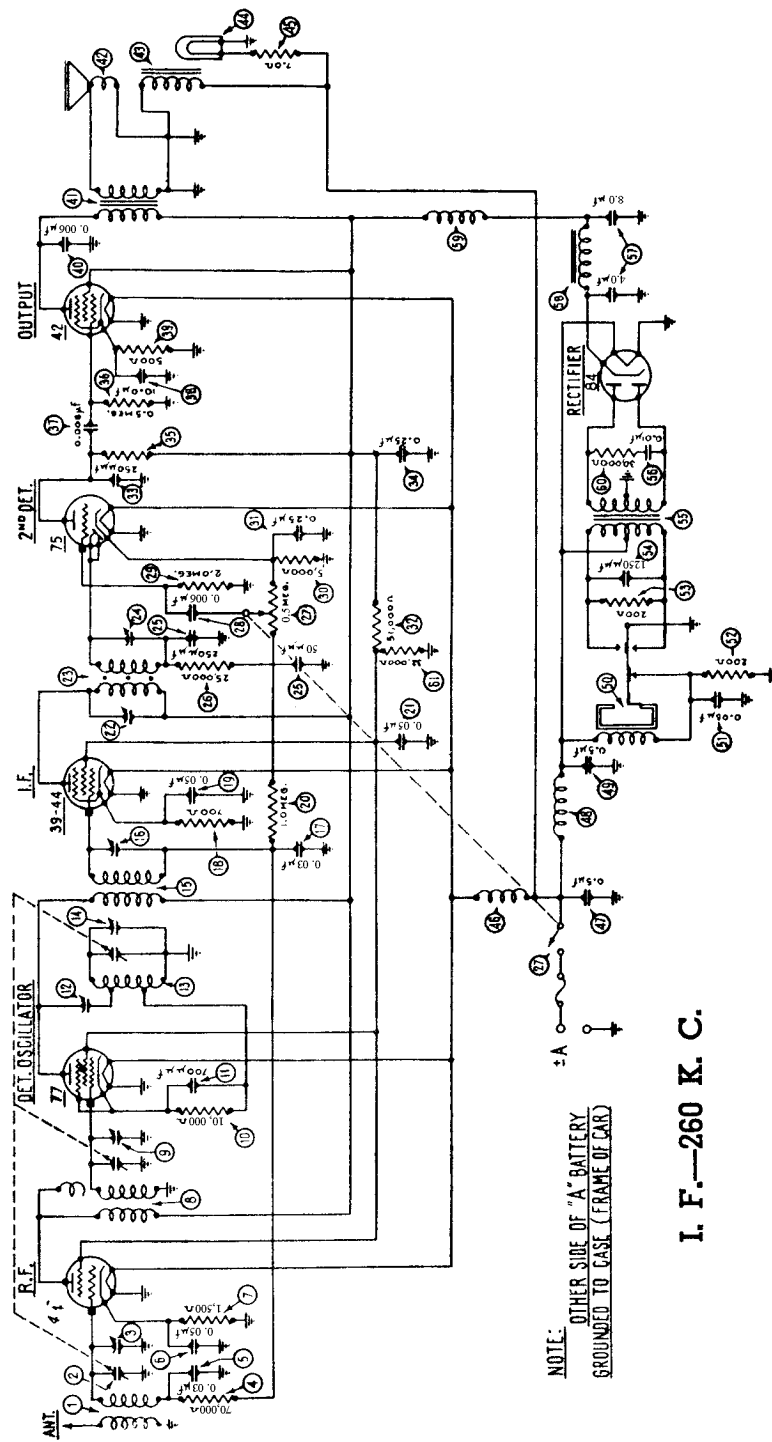
MODEL 10



MODEL 10 PARTS LIST

① Antenna Transformer..... 32-1220	④① Field Coil Assembly..... 36-3120
② Tuning Condenser..... 30-1083	④② Tone Control..... 30-4056
③ 1st Padder (in tuning cond.).....	④③ Pilot Lamp..... 6608
④ Resistor (100,000 ohms)..... 6099	④④ Condenser (.25 mfd.)..... 04360
⑤ Condenser (.05 mfd.)..... 30-4020	④⑤ Resistor (20,000 ohms)..... 6649
⑥ R. F. Transformer..... 32-1221	④⑥ Condenser (.05 mfd.)..... 30-4020
⑦ Condenser (.05 mfd.)..... 30-4020	④⑦ Resistor (32,000 ohms)..... 3525
⑧ 2nd Padder (in tuning cond.).....	④⑧ Condenser (.5 mfd.)..... 30-4048
⑨ 3rd Padder (in tuning cond.).....	④⑨ Resistor (200 ohms)..... 7217
⑩ Resistor (50,000 ohms)..... 6098	④⑩ Resistor (100 ohms)..... 7838
⑪ Oscillator Transformer..... 32-1222	④⑪ A Choke..... 32-7109
⑫ Condenser (.00025 mfd.)... 3082	④⑫ 15 Amp. Fuse..... 7227
⑬ Padder..... 04000S	④⑬ Condenser (.5 mfd.)..... 30-4061
⑭ Resistor (15,000 ohms)..... 6208	④⑭ Vibrator Choke..... 32-1235
⑮ Padder (prim. 1st I. F.)... 31-6007	④⑮ Condenser (.5 mfd.)..... 30-4061
⑯ I. F. Transformer (1st).... 38-5274	④⑯ Vibrator..... 38-5036
⑰ Resistor (500,000 ohms).... 6097	④⑰ Condenser (.05 mfd.)..... 30-4039
⑱ Padder (secondary 1st I. F.)31-6007	④⑱ Resistor (200 ohms)..... 7217
⑲ Condenser (.05 mfd.)..... 30-4020	④⑲ Resistor (200 ohms)..... 7217
⑳ Condenser (.5 mfd.)..... 30-4058	④㉑ Condenser (.00125 mfd.)... 5886
㉑ Resistor (500 ohms)..... 6977	④㉒ Power Transformer..... 32-7098
㉒ Resistor (500,000 ohms).... 6097	④㉓ Condenser (.01 mfd.)..... 30-4051
㉓ Condenser (.00011 mfd.)... 4519	④㉔ Filter Condenser..... 30-2015
㉔ Padder (prim. 2nd I. F.)... 31-6008	④㉕ B Chokes..... 32-7038
㉕ I. F. Transformer (2nd).... 38-5275	④㉖ R. F. Chokes..... 32-1078
㉖ Padder (secondary 2nd I. F.)31-6008	④㉗ Resistor (50,000 ohms).... 4237
㉗ Resistor (100,000 ohms).... 6099	④㉘ Resistor (7 ohms)..... 5110
㉘ Condenser (.00025 mfd.)... 3082	Spark Plug Resistors..... 4531
㉙ Condenser (.01 mfd.)..... 30-4051	Distributor Resistor..... 4546
㉚ Vol. Control Assembly..... 38-5280	Screw Type Resistor..... 4851
㉛ Resistor (2,000,000 ohms)33-1025	Interference Condenser.... 30-4007
㉜ Condenser (.00025 mfd.)... 5828	Dial..... 27-5022
㉝ Resistor (250,000 ohms).... 3768	Studs..... 28-6036
㉞ Condenser (.006 mfd.)..... 30-4024	Nuts (mounting)..... W55
㉟ Resistor (500,000 ohms).... 6097	Knobs..... 03334
㊱ Condenser (20 mfd.; 25mfd.)30-2027	Battery Cable..... 38-5296
㊲ Resistor (550 ohms)..... 6977	Antenna Lead..... 38-5161
㊳ Condenser (.006 mfd.)..... 30-4024	Control Unit Assembly..... 42-5056
㊴ Output Transformer..... 32-7106	Acorn Nut..... W821
㊵ Cone and Coil..... 36-3020	Key..... 6091

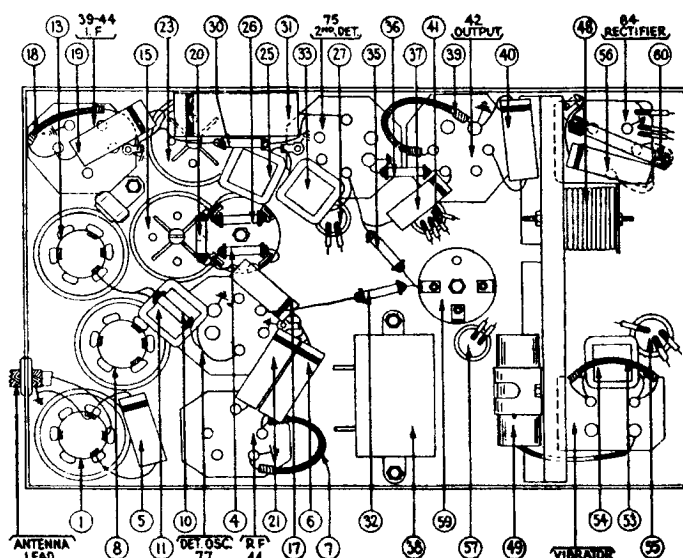
MODEL 11 (Auto Radio)



NOTE: OTHER SIDE OF "A" BATTERY
GROUNDED TO CASE (FRAME OF CAR)

I. F.—260 K. C.

MODEL 11



MODEL 11 PARTS LIST

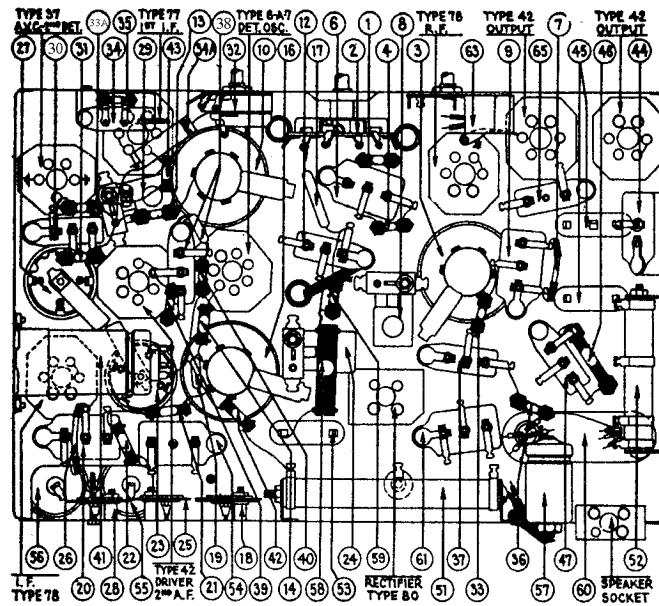
① Antenna Transformer.....32-1331	④⑧ Field Coil Assembly.....36-3097
② Tuning Condenser.....31-1149	④④ Pilot Light.....6608
③ 1st Padder (on tun. cond.).....	④⑤ Resistor (7 ohms).....33-3035
④ Resistor (70,000 ohms).....33-1115	④⑥ "A" Choke.....32-1286
⑤ Condenser (.03 mfd.).....30-4025	④⑦ Condenser (.5 mfd.).....30-4047
⑥ Condenser (.05 mfd.).....30-4020	④⑧ Vibrator Choke.....32-1235
⑦ Resistor (1500 ohms).....33-3047	④⑨ Condenser (.5 mfd.).....30-4147
⑧ R. F. Transformer.....32-1332	④⑩ Vibrator Unit.....38-5036
⑨ 2nd Padder (on tun. cond.).....	⑤① Condenser (.05 mfd.).....30-4039
⑩ Resistor (10,000 ohms).....33-1000	⑤② Resistor (200 ohms).....7217
⑪ Condenser (.0007 mfd.).....5863	⑤③ Resistor (200 ohms).....7217
⑫ Padder (Prim. 1st I. F. Tran.).....	⑤④ Condenser (.00125 mfd.).....5886
⑬ Oscillator Transformer.....32-1333	⑤⑤ Power Transformer.....32-7216
⑭ 3rd Padder (on tun. cond.).....	⑤⑥ Condenser (.01 mfd.).....30-4051
⑮ 1st I. F. Transformer.....32-1329	⑤⑦ Condenser (4-.8. mfd.).....30-2072
⑯ Padder (Sec. 1st I. F. Tran.).....	⑤⑧ "B" Choke.....32-7215
⑰ Condenser (.03 mfd.).....30-4025	⑤⑨ R. F. Choke.....32-1281
⑱ Resistor (700 ohms).....6443	⑥① Resistor (30,000 ohms).....7836
⑲ Condenser (.05 mfd.).....30-4020	⑥② Resistor (32,000 ohms).....3525
⑳ Resistor (1,000,000 ohms).....33-1096	Spark Plug Resistor.....33-1015
㉑ Condenser (.05 mfd.).....30-4020	Distributor Resistor.....4546
㉒ Padders (Prim. 2nd I. F.).....	Screw Type Resistor.....4851
㉓ 2nd I. F. Transformer.....32-1237	Interference Condenser.....30-4007
㉔ Padder (Sec. 2nd I. F. Tran.).....	Dial.....27-5038
㉕ Cond. (.00011-.00025 mfd.).....30-1020	Studs.....28-6036
㉖ Resistor (25,000 ohms).....33-1013	Nuts (mounting).....W55A
㉗ Vol. Con. and Switch Assm. 33-5058	Knobs (tuning).....03334
㉘ Condenser (.006 mfd.).....30-4125	Knobs (volume).....06886
㉙ Resistor (2,000,000 ohms).....33-1025	Battery Cable.....38-5296
㉚ Resistor (5000 ohms).....6096	Acorn Nut.....W821
㉛ Condenser (.25 mfd.).....30-4146	Key.....6001
㉜ Resistor (51,000 ohms).....5868	Fuse.....7227
㉝ Condenser (.00025 mfd.).....3082	Fuse Insulator.....27-7131
㉞ Condenser (.25 mfd.).....04360	4-Prong Socket.....27-6006
㉟ Resistor (100,000 ohms).....6099	5-Prong Socket.....27-6014
㊱ Resistor (500,000 ohms).....6097	6-Prong Socket.....6417
㊲ Condenser (.006 mfd.).....30-4125	Cont. Unit Assm. (Dir. Dr.) 42-5150
㊳ Condenser (10 mfd.).....7440	Shafts—Tuning.....28-8139
㊴ Resistor (500 ohms).....33-3031	Volume.....28-8141
㊵ Condenser (.006 mfd.).....30-4024	Cont. Unit Assm. (Gr. Dr.) 42-5157
㊶ Output Transformer.....32-7214	Shafts—Tuning.....28-8217
㊷ Cone and Voice Coil.....02861	Volume.....28-8217

[illegible]

NOTE: Resistance of U-3 speaker field is 1140 ohms instead of 1420 as shown on diagram above.

MODEL 14

(Codes 122 & 123)



Replacement Parts for Model 14

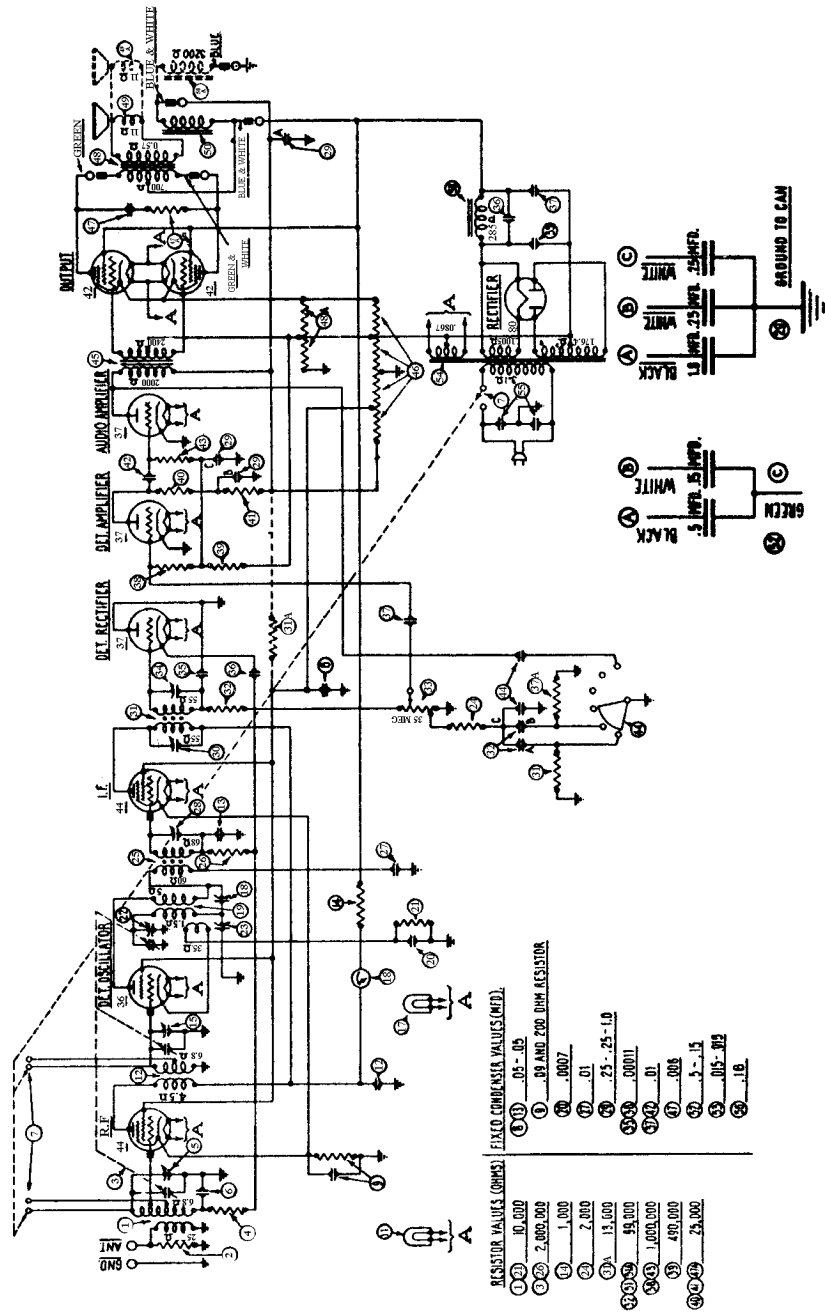
No. on Figs.	Description	Part No.	No. on Figs.	Description	Part No.
①	Resistor (10,000) (Brown-Black-Orange).....	4412	④②	Resistor (50,000) (Green-Brown-Orange).....	4518
②	Wave Band Switch.....	42-1035	④③	Resistor (1.0 meg.) (Brown-Black-Green).....	4409
③	Antenna Transformer.....	32-1261	④④	Condenser (.1).....	3615-BM
④	Resistor (70,000) (Violet-Black-Orange).....	5385	④⑤	Input Transformer.....	32-7057
⑤	Tuning Condenser Assembly.....	{(Code 122) 31-1099 {(Code 123) 31-1100	④⑥	Resistor (10,000 ohms) (Brown-Black-Orange).....	3524
⑥	Condenser (Double) (.05-.05).....	3615-AM	④⑦	Condenser (.01).....	3903-P
⑦	Resistor (Flexible Wire Wound); (200) (Red-Black-Brown).....	7217	④⑧	Output Transformer.....	32-7052
⑧	Compensating Condenser (Ant.; H. F.).....	04000-A	④⑨	Voice Coil and Cone Assembly.....	36-3061
⑨	Condenser (.18).....	4989-AC	⑤①	Speaker Field Coil and Pot Assembly (U-3).....	36-3162
⑩	Detector Transformer.....	32-1256	⑤②	Resistor (Wire Wound); (6,500).....	33-3033
⑪	Compensating Condenser (Det.; Part of ⑤).....		⑤③	Voltage Divider Resistor (Wire Wound).....	33-3032
⑫	Condenser (.05).....	3615-AA	⑤④	Filter Choke.....	32-7115
⑬	Resistor (2.0 meg.) (Red-Black-Green).....	5872	⑤⑤	Condenser (.25 mfd.).....	6287-N
⑭	Resistor (50,000) (Green-Brown-Orange).....	4518	⑤⑥	Condenser (Electrolytic) (8.0 mfd.).....	{(Code 122) 30-2022 {(Code 123) 7464
⑮	Compensating Condenser (Osc.; H. F.; Part of ⑤).....		⑤⑦	Condenser (Electrolytic) (8.0 mfd.).....	{(Code 122) 30-2025 {(Code 123) 7464
⑯	Oscillator Transformer.....	32-1282	⑤⑧	Condenser (Electrolytic) (10.0 mfd.).....	30-2003
⑰	Condenser (.006).....	6359	⑤⑨	Resistor (32,000) (Orange-Red-Orange).....	33-1026
⑱	Compensating Condenser (Osc.) L. F.).....	04000-R	⑤⑩	Resistor (70,000) (Violet-Black-Orange).....	5385
⑲	Condenser (.0001).....	4519	⑥①	Power Transformer (50-60 cycles).....	32-7111
⑳	Condenser (Double); (.05-.15).....	6287-M	⑥②	Condenser (Double); (.015-.015).....	3793-R
㉑	Resistor (20,000) (Red-Black-Orange).....	6650	⑥③	Pilot Lamp (Station Selector).....	6608
㉒	Resistor (20,000) (Red-Black-Orange).....	6650	⑥④	Tone Control.....	30-4073
㉓	1st. I. F. Transformer.....	32-1263	⑥⑤	Condensers, (Internal to ⑥③).....	
㉔	Compensating Condenser (1st. I. F. Pri.).....	04000-J	⑥⑥	Condenser, (External to ⑥③).....	3615-G
㉕	Compensating Condenser (1st. I. F. Sec.).....	04000-H	⑥⑦	Shadow Tuning Meter.....	6497
㉖	Resistor (Flexible Wire Wound) (500) (Green-Black-Brown).....	6977	⑥⑧	Pilot Lamp; (Part of ⑥⑦ Shadow Tuning Meter).....	
㉗	2nd. I. F. Transformer.....	32-1264		Shield ("Push-on" Button).....	W-775
㉘	Compensating Condenser (2nd. I. F. Pri.).....	04000-J		Tube Shield.....	28-1107
㉙	Compensating Condenser (2nd. I. F. Sec.).....	04000-T		Four-Prong Tube Socket.....	7544
㉚	Condenser (Double); (.0001-.0001).....	8035-K		Five-Prong Tube Socket.....	7546
㉛	Resistor (.1 meg.) (White-White-Orange).....	4411		Six-Prong Tube Socket.....	7547
㉜	Volume Control & "On-Off" Switch.....	33-5024		Seven-Prong Tube Socket.....	27-6005
㉝	Resistor (10,000) (Brown-Black-Orange).....	4412		Speaker Socket.....	4957
㉞a	Resistor (240,000) (Red-Yellow-Yellow).....	4410		Dial Scale (Station Selector).....	27-5013
㉟	Condenser (.01).....	3903-Z		Mounting Bolt (Chassis).....	W-567
㊱a	Condenser (.05).....	30-4020		Mounting Washer (Chassis).....	5189
㊲	Resistor (1.0 meg.) (Brown-Black-Green).....	4409		Mounting Washer (Chassis).....	5058
㊳	Resistor (.1 meg.) (White-White-Orange).....	4411		Knob (large).....	03063
㊴	Condenser (.09).....	4989-N		Knob (small).....	03064
㊵	Condenser.....	{(.00011) 4519 {(.015) 3793-A1		Knob Spring.....	5262
㊶	Resistor (.5 meg.) (Yellow-White-Yellow).....	4517		Bezel.....	6418
㊷	Resistor (.1 meg.) (White-White-Orange).....	4411		Bezel Mounting Screw.....	W-452
㊸	Electrolytic Condenser ("A"=1.0 mfd.; "B"=1.0 mfd.; "C"=2.0 mfd.).....	30-2029		Bezel Felt.....	6732
				Speaker (K-17) (Baby Grand Only).....	32-7078 36-3020 36-3104
				Speaker Socket Hole Cover.....	7084
				Speaker Cable.....	L-1632

NOTE 1: In code 122 starting with run No. 3, condensers 55 and 57 are replaced by one condenser, part No. 30-2045, capacity 8 Mfd. and 10 Mfd.

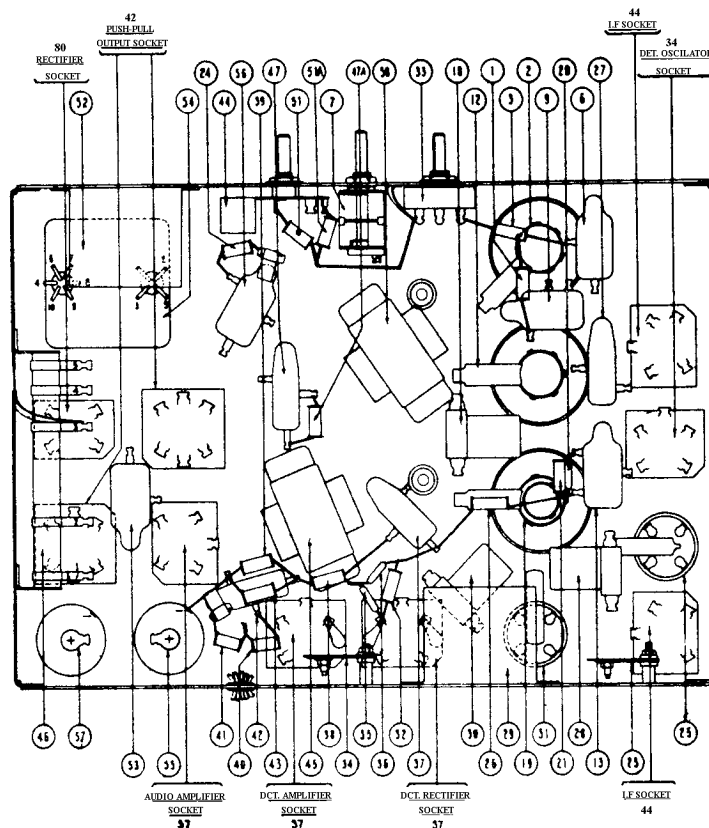
NOTE 2: Starting with run No. 2, condenser 3903Z (.01 Mfd.) is superseded by No. 4989AJ (.09 Mfd.).

NOTE 3: Starting with run No. 2, resistor No. 4411 (.1 Meg.) is superseded by part 4517 (.5 Meg.).

MODELS 14 AND 91



Models 14 and 91

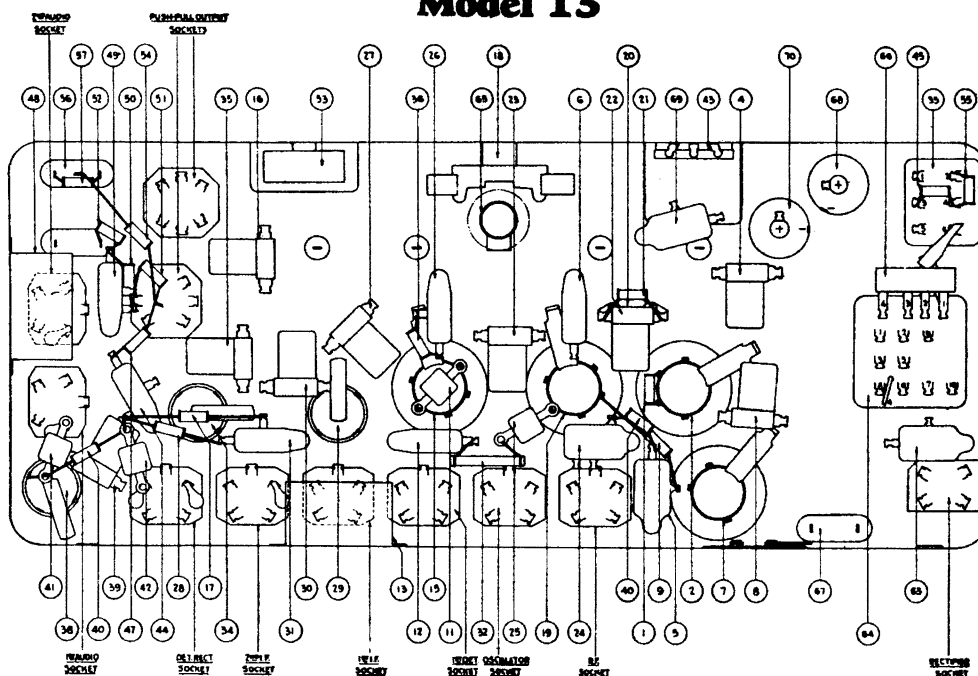


REPLACEMENT PARTS

No. on Figs.	Description	Part No.	No. on Figs.	Description	Part No.
①	Resistor (Brown-Black-Orange)	4412	④③	Resistor (Brown-Black-Green)	4409
②	R.F. Transformer	32-1069	④④	Tone Control	06698
③	Resistor (Red-Black-Green)	5872	④⑤	Push-Pull Input Transformer	6064
④	Tuning Condenser Assembly	04790	④⑥	B.C. Resistor (Wire Wound)	6702
⑤	Compensating Cond. (R.F.) Part of ④		④⑥a	B.C. Resist. (Wire Wound) Twin Speaker	6808
⑥	Condenser	3615-AM	④⑦	Condenser	7625-B
⑦	"On-Off" and Frequency Switch	42-1002	④⑦a	Resistor (Red-Green-Orange)	4516
⑧	Condenser (and Resistor)	6287-C	④⑧	Push-Pull Output Trans. (Sing. Speaker)	2585
⑨	Pilot Lamp (Philco Scale)	6608	④⑧	Push-Pull Output Trans. (Twin Speaker)	2565
⑩	Detector Transformer	32-1070	④⑨	Voice Coil and Cone Assembly (K-6 and K-12)	02823
⑪	Condenser	3615-AJ	④⑨a	Voice Coil and Cone Assembly (H-7) Twin Speaker Model	02807
⑫	Resistor (Brown-Black-Red)	5837	⑤①	Speaker Field Assembled with Pot (K-6 and K-12)	02803
⑬	Compensating Cond. (Detector) Part of ④		⑤①a	Speaker Field Assembled with Pot (H-7) Twin Speaker Model	02803
⑭	Tuning Meter	6497	⑤②	Resistor (White-White-Orange)	4411
⑮	Pilot Lamp (Tuning Meter)	6608	⑤②a	Resistor (White-White-Orange)	4411
⑯	Compensating Cond. (1st I.F. Primary)	04000-M	⑤③	Condenser Bank	06713
⑰	Oscillator Coil	05985	⑤④	Condenser (Double)	3793-E
⑱	Condenser (White and Yellow)	4520	⑤④	Power Trans. (50-60 cycles) Sing. Speak'r	6554
⑲	Resistor (Brown-Black-Orange)	4412	⑤④	Power Trans. (25-40 cycles) Sing. Speak'r	6555
⑳	Comp. Cond. (High Freq.) Part of ④		⑤④	Power Trans. (50-60 cycles) Twin Speak'r	6804
㉑	Compensating Condenser (Low Freq.)	04000-B	⑤④	Power Trans. (25-40 cycles) Twin Speak'r	6805
㉒	Resistor (Red-Black-Red)	6984	⑤⑤	Electrolytic Cond. (6 MFD) Sing. Sp'ker	4916
㉓	First I.F. Transformer	04319	⑤⑤	Electrolytic Cond. (8 MFD) Twin Sp'ker	7464
㉔	Resistor (Red-Black-Green)	5872	⑤⑥	Condenser	4989-T
㉕	Condenser	3903-AE	⑤⑦	Electrolytic Cond. (6 MFD) Sing. Sp'ker	4916
㉖	Comp. Cond. (1st I.F. Secondary)	04000-M	⑤⑦	Electrolytic Cond. (8 MFD) Twin Sp'ker	7464
㉗	Filter Condenser Bank	04830	⑤⑧	Filter Choke	4819
㉘	Comp. Cond. (2d I.F. Primary)	04000-M	⑤⑧	Tube Shields	8005
㉙	Second I.F. Transformer	04320	⑤⑧	Knob (Large)	03063
㉚	Resistor (White-White-Orange)	4411	⑤⑧	Knob (Medium)	03064
㉛	Volume Control	8054	⑤⑧	Knob (Small)	03437
㉜	Comp. Cond. (2nd I.F. Secondary)	04000-M	⑤⑧	Four Prong Socket	5026
㉝	Condenser (Blue and Golden Yellow)	4519	⑤⑧	Five Prong Socket	4956
㉞	Condenser (Blue and Golden Yellow)	4519	⑤⑧	Six Prong Socket	6417
㉟	Condenser	3903-P	⑤⑧	Dial, Complete	04832
㊱	Resistor (Brown-Black-Green)	4409	⑤⑧	Bezel	6418
㊲	Resistor (Yellow-White-Yellow)	4517			
㊳	Resistor (Red-Green-Orange)	4516			
㊴	Resistor (Red-Green-Orange)	4516			
㊵	Condenser	3903-P			

NOTE: SWITCHES GANGED AS SHOWN -

Model 15

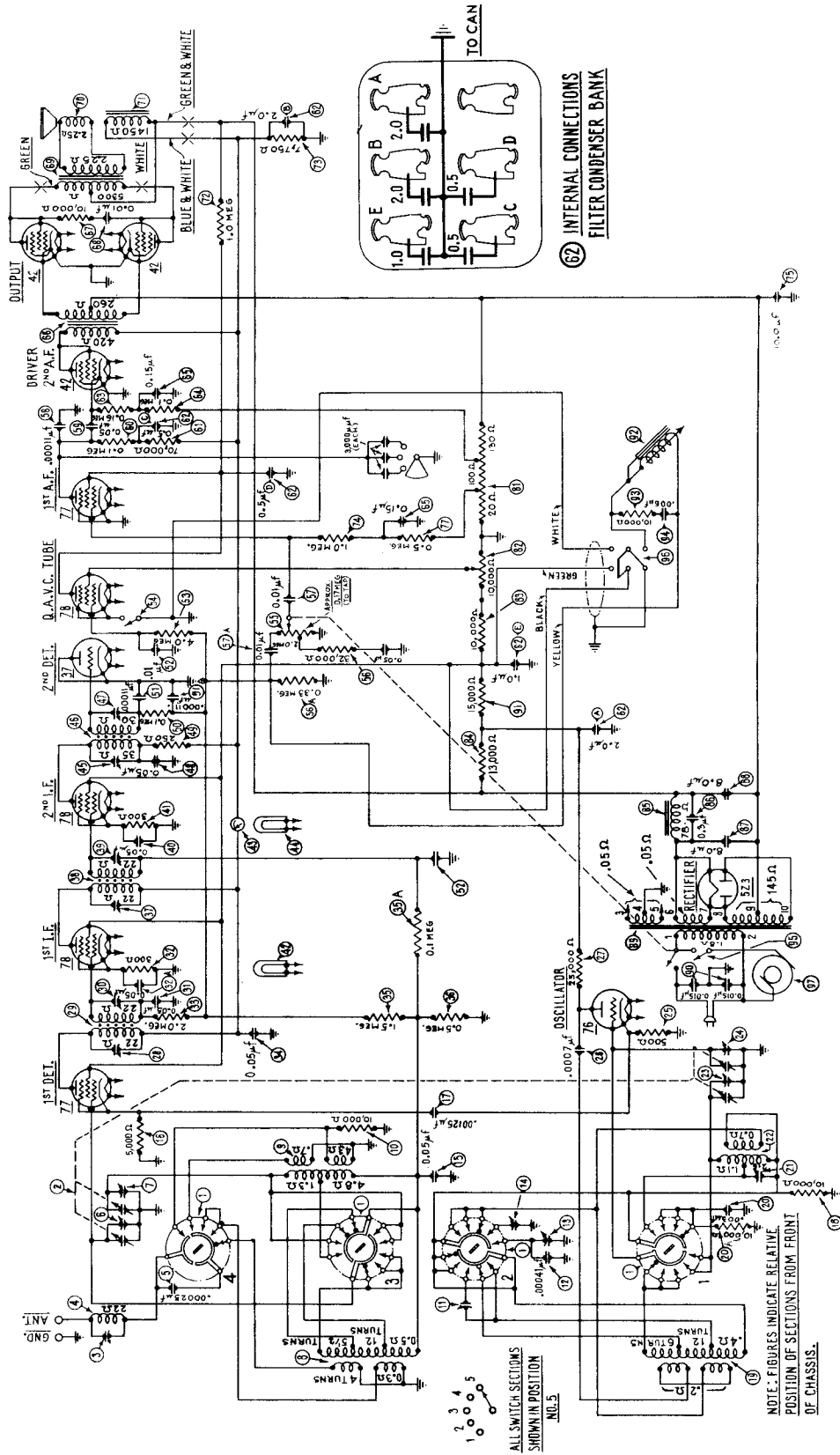


REPLACEMENT PARTS MODEL 15

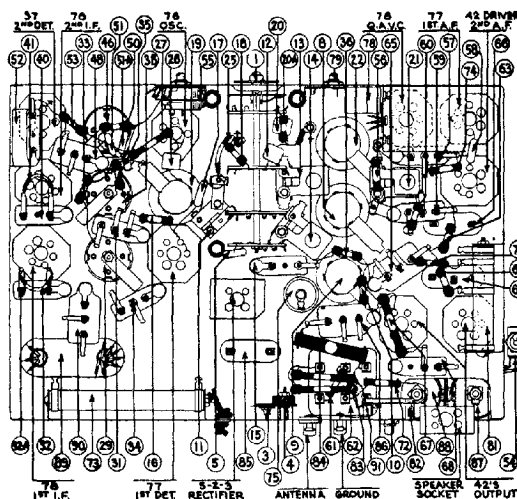
No. on Figs. 1 and 2	Description	Part No.
①	Resistor (10,000 ohms)	4412
②	First R. F. Coil	04981
③	Tuning Condenser Assembly	04941
④	Compensating Condenser—First Antenna	04000-E
⑤	Condenser (.05 mfd.) Double	3615-AM
⑥	Condenser (.05 mfd.)	3615-L
⑦	Second R. F. Coil	04982
⑧	Compensating Condenser—Second Antenna	04000-E
⑨	Resistor (400,000 ohms)	4517
⑩	Resistor (100,000 ohms)	5331
⑪	Condenser (35 mmf.)	4900
⑫	Condenser (.09 mfd.)	4959-D
⑬	Condenser (.25 mfd.)	4204
⑭	Pilot Light	6608
⑮	Detector Transformer	3884-V
⑯	Compensating Condenser—Detector	04000-E
⑰	Resistor (400,000 ohms)	4517
⑱	Distance Switch and Power Switch	0439
⑲	Oscillator Coil	04983
⑳	Condenser (.700 mmf.)	4520
㉑	Resistor (51,000 ohms)	4518
㉒	Compensating Condenser—Low Frequency	04000-F
㉓	Compensating Condenser—High Frequency	04000-E
㉔	Condenser (.09 mfd. and 200 ohm Resistor)	4989-R
㉕	Condenser (110 mfd.)	4519
㉖	Condenser (.05 mmf.)	3615-J
㉗	Compensating Condenser—First I. F. Primary	04000-J
㉘	Resistor (1,000,000 ohms)	4409
㉙	First I. F. Transformer	03038
㉚	Compensating Condenser—First I. F. Secondary	04000-J
㉛	Condenser (.05 mfd.)	3615-J
㉜	Resistor (13,000 ohms)	3786
㉝	Filter Condenser (.015, 3-5, 1 mfd.) 50-60 cycles	03489
㉞	Second I. F. Transformer	04979
㉟	Compensating Condenser—Second I. F. Secondary	04000-J
㊱	Resistor (1,000 ohms)	5837
㊲	Shadow Tuning Meter	6497
㊳	Third I. F. Transformer	03345
㊴	Compensating Condenser—Third I. F. Secondary	04000-J
㊵	Resistor (99,000 ohms)	4411
㊶	Condenser (110 mmf.)	4519
㊷	Condenser (110 mmf.)	4519
㊸	Volume Control	4894

No. on Figs. 1 and 2	Description	Part No.
㊹	Condenser (.01 mfd.)	3903-AD
㊺	Resistor (5,000 ohms)	5310
㊻	Pilot Light (Shadow Tuning)	6608
㊼	Resistor (1,000,000 ohms)	4409
㊽	Condenser (.25 mfd. Double)	3557
㊾	Condenser (.01 mfd.)	3903-T
㊿	Resistor (25,000 ohms)	4516
①	Resistor (1,000,000 ohms)	4409
②	Resistor (10,000 ohms)	4412
③	Tone Control	04787
④	Resistor (400,000 ohms)	4517
⑤	Resistor (5,000 ohms)	5310
⑥	Input Transformer	5682
⑦	Resistor (340,000 ohms) across volume control ends—not illustrated	4410
⑧	Output Transformer	2585
⑨	Condenser (.002 Mfd.) Blue—across primary of output transformer—not illustrated	6853
⑩	Voice Coil and Cone Assembly (Large) H-7	02807
⑪	Field Coil Assembled with Pot (H-7)	02770
⑫	Voice Coil and Cone Assembly (Small) K-12	02823
⑬	Field Coil Assembled with Pot (K-12)	02803
⑭	Condenser (.015 mfd. Double)	3793-E
⑮	Power Transformer (50-60 cycles)	6672
⑯	Power Transformer (25-40 cycles)	6673
⑰	Power Transformer (50-60 cycles, 230 volts)	6674
⑱	Cabinet Lamp	6600
⑲	Resistor (50 ohms, 50 ohms, 205 ohms)	6700
㉑	Filter Choke	3422
㉒	Electrolytic Condenser (6 mfd.)	6707
㉓	Condenser (.18 mfd.)	4989-K
㉔	Electrolytic Condenser (6 Mfd.)	6706
㉕	Knob (Large)	08083
㉖	Knob (Medium)	03064
㉗	Knob (Small)	03437
㉘	Knob Spring (Large)	4147
㉙	Knob Spring (Small)	5262
㉚	Tube Shield	04982
㉛	Grid Clips	4897
㉜	Four Prong Socket	5026
㉝	Five Prong Socket	4986
㉞	Six Prong Socket	6417
㉟	Dial Scale	4276
㊱	Base	6433
㊲	Pilot Bracket Complete	05016
㊳	Cabinet Lamp Socket	6584
㊴	Cabinet Lamp Socket Insulator	6606
㊵	Cone Retaining Ring	2800

MODEL 16



Model 16



REPLACEMENT PARTS FOR MODEL 16

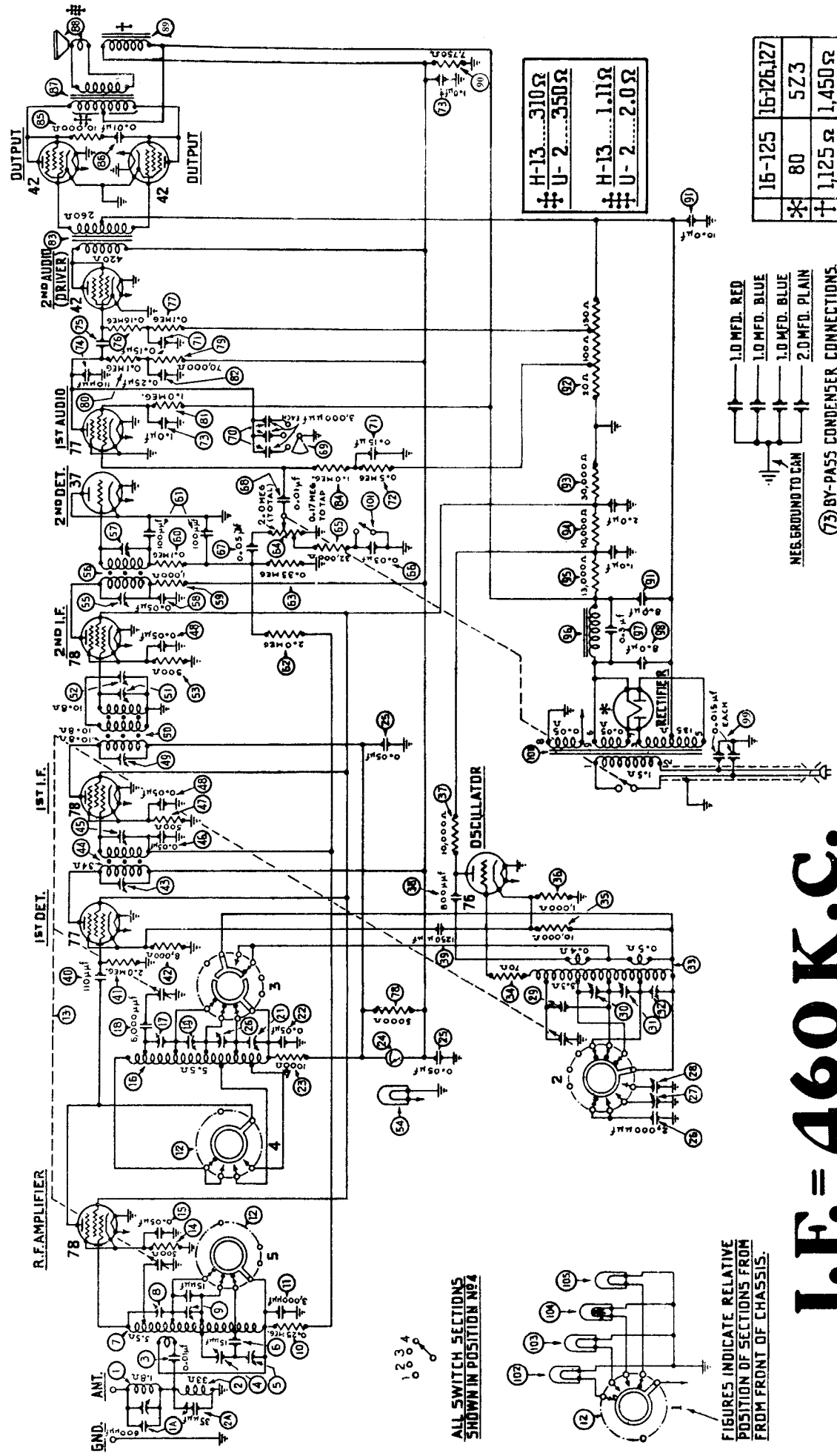
No. on Figs.	Description	Part No.	List Price	No. on Figs.	Description	Part No.	List Price
1	Wave Band Switch.....	42-1037	....	46	Compensating Cond'ser (3d, I. F. Primary)	31-6003	....
2	Tuning Condenser Assembly.....	31-1039	....	46	3d, I. F. Transformer.....	32-1188	....
3	Compensating Condenser (Wave-trap).....	38-5199	....	47	Compensating Cond'r (3d, I. F. Secondary)	Common with 45	....
4	Inductance (Wave-trap).....			48	Condenser.....	3615-AS	.25
5	Condenser.....	5858	.16	49	Resistor (Part of 48).....	....	....
6	Compensating Condenser (Ant.; H. F.; Part of 2).....	....	....	50	Resistor (White-White-Orange).....	4411	.20
7	Compensating Condenser (Ant., Broadcast and Police; Part of 2).....	....	....	51	Condenser.....	4519	.18
8	Antenna Transformer (H. F. Bands).....	32-1183	....	51a	Condenser.....	4519	.18
9	Antenna Transformer (B'dc't & Police B'ds).....	32-1182	....	52	Condenser (Double).....	7296-G	....
10	Resistor (Brown-Black-Orange).....	4412	.20	53	Resistor (Yellow-Black-Green).....	6010	.20
11	Compensating Condenser (Range 3).....	04000-V	.16	54	Switch (Toggle); Interstation Noise Suppression Circuit.....	42-1036	.40
12	Condenser.....	30-1000	.20	56	Volume Control and "On-Off" Switch.....	33-5013	1.00
13	Compensating Condenser (Range 2; series).....	04000-R	.35	56	Resistor (Green-Black-Red).....	5310	.20
14	Compensating Condenser (Range 1; series).....	04000-R	.35	57	Condenser.....	3903-J	.20
15	Condenser.....	3615-L	.16	58	Condenser.....	4519	.18
16	Resistor (Green-Black-Red).....	5310	.20	59	Condenser.....	3615-AD	.20
17	Condenser.....	5886	.25	60	Resistor (White-White-Orange).....	4411	.20
18	Resistor (Brown-Black-Orange).....	4412	.20	61	Resistor (Violet-Black-Orange).....	5385	.20
19	Oscillator Coil (H. F.).....	32-1185	....	62	Filter Condenser Bank.....	30-4026	3.00
20	Condenser.....	7301	.35	63	Resistor (Brown-Blue-Yellow).....	5331	.20
20a	Resistor (Brown-Black-Orange).....	4412	.20	64	Resistor (White-White-Orange).....	4411	.20
21	Compensating Condenser (Range 1; Shunt).....	0-4000-A	.12	65	Condenser (Double).....	6287-J	....
22	Oscillator Coil (Broadcast and Police).....	32-1184	....	66	Input Transformer.....	32-7057	2.25
23	Compensating Condenser (Osc.; H. F.; Part of 2).....	....	....	67	Resistor (Brown-Black-Orange).....	3524	.20
24	Compensating Condenser (Osc.; Police; Part of 2).....	....	....	68	Condenser.....	3903-F	.15
25	Resistor (Flexible Wire-wound; Green-Black-Brown).....	6977	.20	69	Output Transformer.....	32-7052	....
26	Condenser.....	5863	.18	70	Voice Coil and Cone Assembly.....	36-3061	.75
27	Resistor (Green-Brown-Orange).....	4237	.25	71	Speaker Field, Assembled with Pot (U-2).....	36-3088	....
28	Compensating Cond'ser (1st, I. F. Primary).....	31-6002	....	72	Resistor (Brown-Black-Green).....	4409	.20
29	1st, I. F. Transformer.....	32-1186	....	73	Resistor (Wire-wound).....	33-3020	.30
30	Compensating Cond'r (1st, I. F. Secondary).....	Common with 28	....	74	Resistor (Brown-Black-Green).....	4409	.20
31	Condenser.....	3615-AB	.20	75	Condenser (Electrolytic).....	30-2003	.70
32	Resistor (Flexible Wire-wound; Orange-Black-Brown).....	33-3010	.15	76	Resistor (Yellow-White-Yellow).....	4517	.20
32a	Condenser.....	3615-AT	.20	78	Condenser (Internal to 76).....	....	....
33	Resistor (Red-Black-Green).....	5872	.20	79	Tone Control.....	30-4033	....
34	Condenser.....	3615-D	.18	80	Condensers (External to 79).....	06713	.45
35	Resistor (Brown-Green-Green).....	7009	.20	81	Voltage Divider Resistor (Wire-wound).....	33-3021	.16
35a	Resistor (White-White-Orange).....	4411	.20	82	Potentiometer (Interstation Noise Suppression Circuit).....	33-5015	.80
36	Resistor (Yellow-White-Yellow).....	4517	.20	83	Resistor (Brown-Black-Orange).....	3524	.20
37	Compensating Cond'ser (2d, I. F. Primary).....	31-6002	....	84	Resistor (Brown-Orange-Orange).....	6450	.35
38	2d, I. F. Transformer.....	32-1186	....	85	Filter Choke.....	32-7056	1.85
39	Compensating Cond'r (2d, I. F. Secondary).....	Common with 37	....	86	Condenser.....	6287-F	.12
40	Condenser.....	3615-AT	.20	87	Condenser (Electrolytic).....	30-2011	1.25
41	Resistor (Flexible Wire-wound; Green-Black-Brown).....	6977	.20	88	Condenser (Electrolytic).....	30-2011	1.25
42	Pilot Lamp (Station Selector).....	6608	.12	89	Power Transformer (50-60~).....	32-7058	5.00
43	Shadow Tuning Meter.....	6497	2.25	90	Condenser (Double).....	3793-E	.20
44	Pilot Lamp (Shadow Tuning Meter; Part of 43).....	....	....	91	Resistor (Brown-Green-Orange).....	5718	.40
					Tube Shield.....	28-1107	.10
					Four-prong Socket.....	7545	.08
					Five-prong Socket.....	7546	.10
					Six-prong Socket.....	7547	.10
					Knob (Large).....	03063	.08
					Knob (Small).....	03064	.06

NOTE.—Model 16-121 uses a Type 80 tube in lieu of 5-Z-3. Parts used in the 16-122 chassis that differ from the 16-122 parts above listed are:

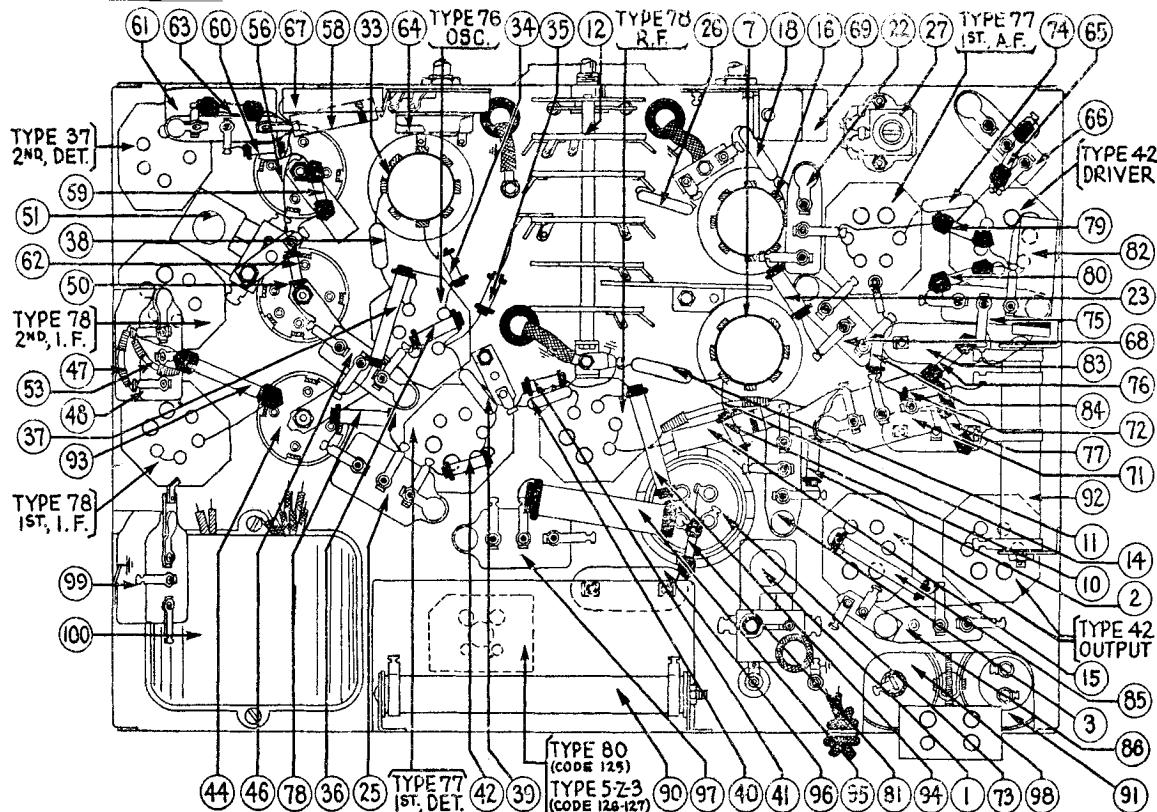
July, 1933	89	Power Transformer (50-60~).....	32-7080	....	Speaker.....	K-17	....
	87	Condenser (Electrolytic) (8.0 Mfd.).....	6706	1.50	Speaker Socket.....	7084	....
	88	Condenser (Electrolytic) (8.0 Mfd.).....	7464	1.25	Speaker Cable.....	L1632	....

(Codes 125, 126, 127)

(Codes 125, 126, 127)



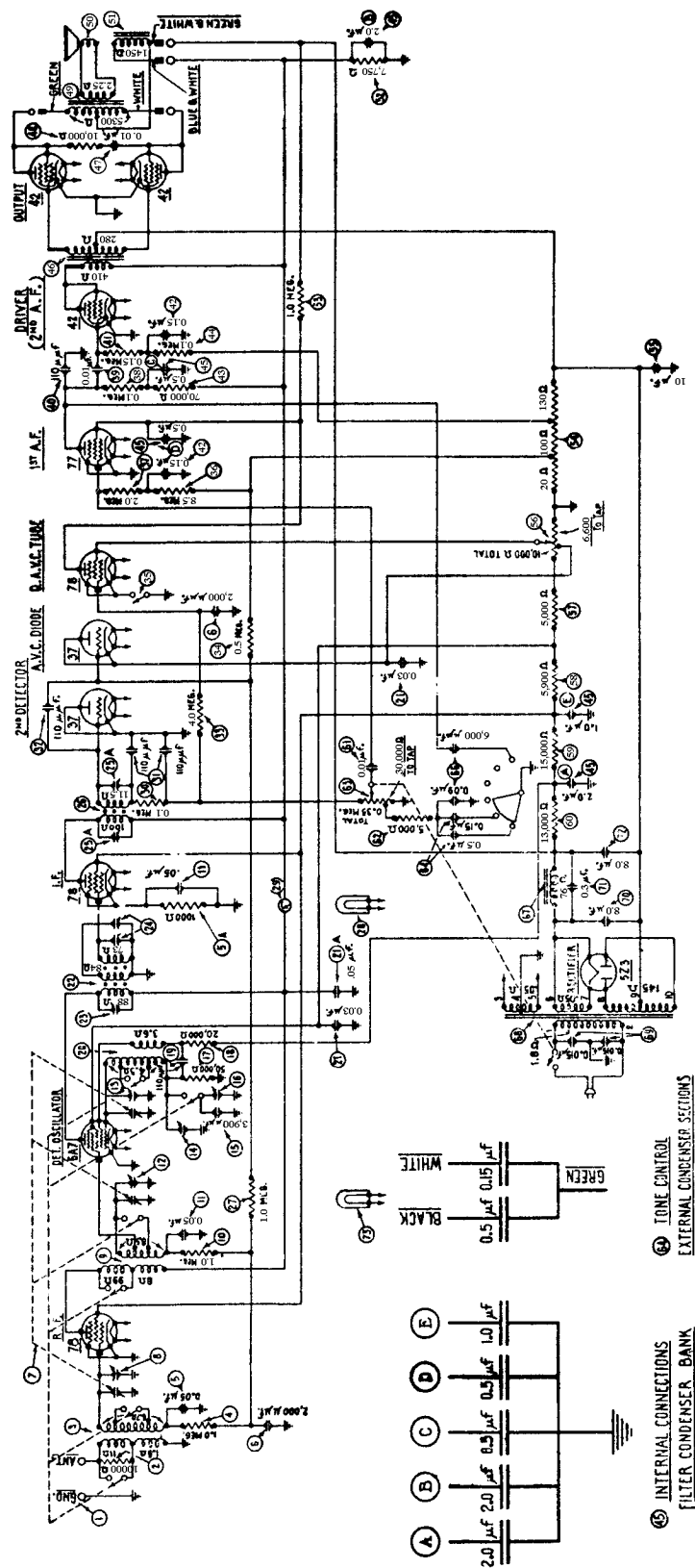
I.F.=460K.C.



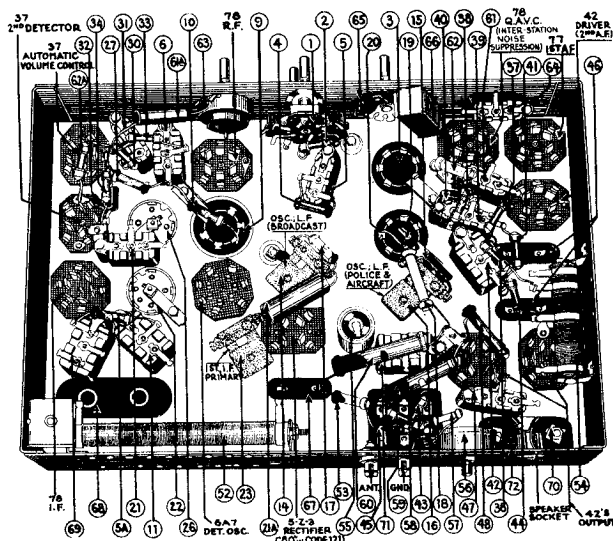
REPLACEMENT PARTS—MODEL 16—CODES 125 AND 126

Nos. on Diagram	Description	Part No.	Nos. on Diagram	Description	Part No.
①	Wave Trap.....	38-6049	⑥	Condenser (.03 Mfd. Bakelite Block).....	8318 F
①a	Condenser (.0006 Mfd. Mica).....	30-1049	⑥a	Condenser (.05 Mfd. Tubular).....	30-4020
②	Antenna Choke Assembly.....	32-1514	⑥b	Condenser (.01 Mfd. Bakelite Block).....	3903 G
②a	Condenser (.00035 Mfd. Mica).....	30-1044	⑥c	Tone Control.....	30-4204
③	Condenser (.01 Mfd. Bakelite Block).....	3903 N	⑥d	Condensers (Inside ⑥g).....	Part of ⑥g
④	Compensating Condenser (Ant. Band 2).....	†Part of 31-6026	⑥e	Condenser (.15 Mfd. Bakelite Block).....	6287 J
⑤	Compensating Condenser (Ant. Band 1).....	†Part of 31-6026	⑥f	Resistor (.5 Meg.) (Yellow-White-Yellow).....	4517
⑥	Condenser (.00015 Mfd. Mica).....	30-1030	⑥g	Condenser (Electrolytic—1, 1, 1, 2 Mfd.).....	30-2078
⑦	Ant. Transformer.....	32-1467	⑥h	Condenser (.00011 Mfd. Mica).....	30-1031
⑧	Compensating Condenser (Ant. Band 4).....	†Part of 31-6026	⑥i	Condenser (.05 Mfd. Bakelite Block).....	3615 AD
⑨	Compensating Condenser (Ant. Band 3).....	†Part of 31-6026	⑥j	Resistor (100,000 ohms) (Brown-Blue-Yellow).....	5331
⑩a	Condenser (.00015 Mfd. Mica).....	30-1030	⑥k	Resistor (.1 Meg.) (White-White-Orange).....	4411
⑪	Resistor (.25 Meg.) (Red-Yellow-Yellow).....	4410	⑥l	Resistor (5000 ohms) (Green-Black-Red).....	5310
⑪a	Condenser (.003 Mfd. Mica).....	7301	⑥m	Resistor (70000 ohms) (Violet-Black-Orange).....	5385
⑪b	Wave Band Switch.....	42-1079J	⑥n	Resistor (.1 Meg.) (White-White-Orange).....	4411
⑪c	Tuning Condenser Assembly.....	31-1350J	⑥o	Resistor (1 Meg.) (Brown-Black-Green).....	4409
⑪d	Resistor (500 ohms Flexible Wirewound).....	6977	⑥p	Condenser (.25 Mfd. Tubular).....	30-4146
⑪e	Condenser (.05 Mfd. Tubular).....	30-4020	⑥q	Audio Transformer.....	32-7057
⑪f	R.F. Transformer.....	32-1468	⑥r	Resistor (1 Meg.) (Brown-Black-Green).....	33-1096
⑪g	Compensating Condenser (R.F.; Band 4).....	†Part of 31-6026	⑥s	Resistor (10000 ohms).....	3524
⑪h	Condenser (.006 Mfd. Mica).....	30-1043	⑥t	Condenser (.01 Mfd. Bakelite Block).....	3903 F
⑪i	Compensating Condenser (R.F.; Band 3).....	†Part of 31-6026	⑥u	Output Transformer (U-2).....	32-7052
⑪j	Compensating Condenser (R.F.; Band 2).....	†Part of 31-6026	⑥v	Output Transformer (H-13).....	32-7078
⑪k	Compensating Condenser (R.F.; Band 1).....	†Part of 31-6026	⑥w	Voice Coil and Cone Assembly (U-2).....	36-5601
⑪l	Condenser (.05 Mfd. Bakelite Block).....	3615 BL	⑥x	Voice Coil and Cone Assembly (H-13).....	02625
⑪m	Resistor (1000 ohms) (Brown-Black-Red).....	5837	⑥y	Field Coil and Pot Assembly (U-2).....	36-3068
⑪n	Shadowmeter.....	45-2028	⑥z	Field Coil and Pot Assembly (H-13).....	36-3104
⑪o	Condenser (.05 Mfd. Twin Bakelite Block).....	3615 BS	⑦	Resistor (B.C. Wirewound 7500 ohms).....	33-3029
⑪p	Condenser (.002 Mfd. Mica).....	30-1042	⑦a	Condenser (Electrolytic—8 & 10 Mfd.).....	30-2045 (code 125)
⑪q	Compensating Condenser (Osc. I.F.; Range 2).....	31-6027	⑦b	Condenser (Electrolytic—8 & 10 Mfd.).....	30-2046 (code 126)
⑪r	Compensating Condenser (Osc. I.F.; Range 1).....	31-6027	⑦c	Resistor (Voltage Divider—20 ohms, 100 ohms, 130 ohms).....	33-3021
⑪s	Compensating Condenser (Osc. H.F.; Range 4).....	31-6026	⑦d	Resistor (30000 ohms) (Orange-Black-Orange).....	7830
⑪t	Compensating Condenser (Osc. H.F.; Range 3).....	31-6026	⑦e	Resistor (10000 ohms) (Brown-Black-Orange).....	3524
⑪u	Compensating Condenser (Osc. H.F.; Range 2).....	31-6026	⑦f	Resistor (13000 ohms) (Brown-Orange-Orange) (3-watt).....	0450
⑪v	Compensating Condenser (Osc. H.F.; Range 1).....	31-6026	⑦g	Filter Choke.....	32-7056
⑪w	Oscillator Transformer.....	32-1469	⑦h	Condenser (.3 Mfd. Bakelite Block).....	6287 F1
⑪x	Resistor (70 ohms) (Violet-Black-Black).....	33-1129	⑦i	Condenser (Electrolytic—8 Mfd.).....	30-2023* (code 125)
⑪y	Resistor (10000 ohms) (Brown-Black-Orange).....	33-1000	⑦j	Condenser (Electrolytic—8 Mfd.).....	30-2011 (code 126)
⑪z	Resistor (1000 ohms) (Brown-Black-Red).....	5837	⑦k	Condenser (.015 Mfd. Twin).....	3793 E
⑪aa	Resistor (10000 ohms) (Brown-Black-Orange).....	3524	⑦l	Power Transformer 60 Cycle 115 Volts (code 125).....	32-7291
⑪ab	Condenser (.0008 Mfd. Mica).....	5878	⑦m	Power Transformer 25 Cycle 115 Volts (code 125).....	32-7292
⑪ac	Condenser (.00125 Mfd. Mica).....	5886	⑦n	Power Transformer 60 Cycle 115 Volts (code 126).....	32-7283
⑪ad	Condenser (.00011 Mfd. Mica).....	4519	⑦o	Power Transformer 25 Cycle 115 Volts (code 126).....	32-7284
⑪ae	Resistor (2 Meg.) (Red-Black-Green).....	33-1025	⑦p	Bass Compensation Switch (Toggle Type).....	3253
⑪af	Resistor (8000 ohms) (Gray-Black-Red).....	33-1157	⑦q	Pilot Lamp (Dial Section).....	34-2031
⑪ag	Compensating Condenser (1st I.F. Pri.).....	31-6003	⑦r	Pilot Lamp (Dial Section).....	34-2031
⑪ah	1st I.F. Transformer.....	32-1188	⑦s	Pilot Lamp (Dial Section).....	34-2031
⑪ai	Compensating Condenser (1st I.F. Sec.).....	Part of ③	⑦t	Pilot Lamp (Dial Section).....	34-2031
⑪aj	Condenser (.05 Mfd. Bakelite Block).....	3615 AA	⑦u	Tube Socket (4 Prong).....	7544
⑪ak	Resistor (500 ohms Flexible Wirewound).....	6977	⑦v	Tube Socket (5 Prong).....	27-6013
⑪al	Condenser (.05 Mfd. Twin Bakelite Block).....	3615 AJ	⑦w	Tube Socket (6 Prong).....	7547
⑪am	Compensating Condenser (2nd I.F. Pri.).....	31-6028	⑦x	Speaker Socket.....	7828
⑪an	2nd I.F. Transformer.....	32-1470	⑦y	Tube Shield (Short Type).....	28-1107
⑪ao	Compensating Condenser (2nd I.F. Tertiary).....	04000R	⑦z	Tube Shield (Tall Type).....	28-1820
⑪ap	Compensating Condenser (2nd I.F. Sec.).....	Part of ③	⑧	Dial Assembly.....	31-1363
⑪aq	Resistor (500 ohms Flexible Wirewound).....	6977	⑧a	Dial Scale.....	27-5064
⑪ar	Pilot Lamp for Shadowmeter.....	Part of ③	⑧b	Chassis Mounting Screw (code 125).....	W 1358A
⑪as	Compensating Condenser (3rd I.F. Pri.).....	31-6003	⑧c	Chassis Mounting Screw (code 126).....	W 1346
⑪at	3rd I.F. Transformer.....	32-1188	⑧d	Chassis Mounting Foot.....	27-4116
⑪au	Compensating Condenser (3rd I.F. Sec.).....	Part of ③	⑧e	Chassis Mounting Foot Plate.....	27-7497
⑪av	Condenser (.05 Mfd. Tubular).....	30-4123	⑧f	Chassis Mounting Washer.....	29-2089
⑪aw	Resistor (1000 ohms) (Brown-Black-Red).....	5837	⑧g	Knob (Waveband Switch, code 126).....	27-4051
⑪ax	Resistor (.1 Meg.) (White-White-Orange).....	0099	⑧h	Knob (Volume Control and Tone Control).....	27-4052
⑪ay	Condenser (.0001 Mfd. Twin Bakelite Block).....	8035 B1	⑧i	Knob (Station Selector).....	27-4139
⑪az	Resistor (2 Meg.) (Red-Black-Green).....	33-1025	⑧j	Knob (Fine Tuning Control).....	27-4140
⑪ba	Resistor (330000 ohms) (Orange-Orange-Yellow).....	6046	⑧k	Bass Compensation Switch Plate.....	28-2415
⑪bb	Volume Control (350000 ohms total) & On-Off Switch.....	33-5022			
⑪bc	Resistor (33000 ohms) (Orange-Red-Orange).....	6046			

MODEL 17



MODEL 17

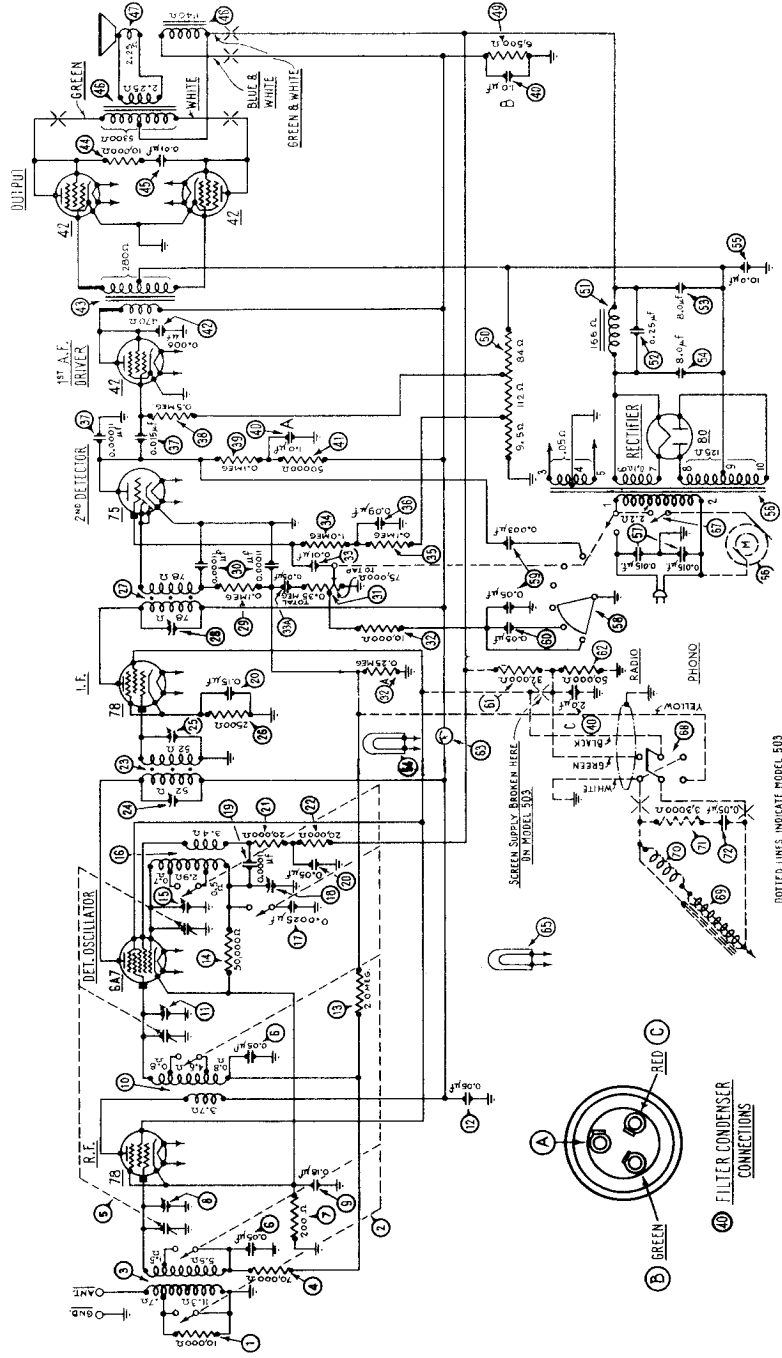


REPLACEMENT PARTS FOR MODEL 17

No. on Figs.	Description	Part Number	List Price	No. on Figs.	Description	Part Number	List Price
①	Wave Band Switch.....	42-1035	.....	③⑧	Resistor (White-White-Orange).....	4411	.20
②	Resistor (Brown-Black-Orange).....	4412	.25	③⑨	Condenser.....	3903-L	.16
③	Antenna Transformer.....	32-1170	.....	④①	Condenser.....	4519	.18
④	Resistor (Brown-Black-Green).....	4409	.20	④②	Resistor (Brown-Blue-Yellow).....	5331	.20
⑤	Condenser.....	3615-BC	.....	④③	Condenser.....	6287-H	.20
⑤a	Resistor (Brown-Black-Red).....	5837	.20	④④	Resistor (Violet-Black-Orange).....	5385	.20
⑥	Condenser (Double).....	7296-E	.....	④⑤	Resistor (White-White-Orange).....	4411	.20
⑦	Tuning Condenser Assembly.....	31-1041	.....	④⑥	Filter Condenser Bank.....	30-4026	.....
⑧	Compensating Condenser (Ant.; Part of ⑦).....	.....	.....	④⑦	Input Transformer.....	32-7057	.....
⑨	1st Detector Transformer.....	32-1171	.....	④⑧	Condenser.....	3903-F	.15
⑩	Resistor (Brown-Black-Green).....	4409	.20	④⑨	Resistor (Brown-Black-Orange).....	3524	.20
⑪	Condenser (Double).....	3615-AP	.....	④⑩	Output Transformer.....	32-7052	.....
⑫	Compensating Condenser (Det.; Part of ⑦).....	.....	.....	⑤①	Voice Coil & Cone Assembly.....	36-3061	.....
⑬	Compensating Cond. (Osc.; Part of ⑦).....	.....	.....	⑤②	Speaker Field, Assembled with Pot, (U-2).....	36-3088	.....
⑭	Compensating Condenser (Oscillator).....	04000-R	.....	⑤③	Resistor (Wire-Wound).....	33-3020	.....
⑮	Condenser.....	7301	.35	⑤④	Resistor (Brown-Black-Green).....	4409	.20
⑯	Compensating Cond. (High Freq.).....	04000-R	.....	⑤⑤	Voltage Divider Resistor (Wire-Wound).....	33-3021	.....
⑰	Resistor (Green-Brown-Orange).....	4518	.20	⑤⑥	Condenser (Electrolytic).....	30-2003	.....
⑱	Resistor (Red-Black-Orange).....	6649	.20	⑤⑦	Potentiometer (Interstation Noise Supp. Ckt.).....	33-5015	.....
⑲	Condenser.....	4519	.18	⑤⑧	Resistor (Green-Black-Red).....	5310	.20
⑳	Oscillator Transformer.....	32-1172	.....	⑤⑨	Resistor (Orange-Orange-Red).....	7238	.20
㉑	Condenser (Double).....	8318-C	.....	⑥①	Resistor (Brown-Green-Orange).....	5718	.40
㉒a	Condenser.....	30-4012	.15	⑥②	Resistor (Brown-Orange-Orange).....	6450	.35
㉒	1st I. F. Transformer.....	32-1173	.....	⑥③	Condenser.....	3903-L	.16
㉓	Compensating Cond. (1st. I. F. Pri.).....	04000-M	.16	⑥④	Resistor (Green-Black-Red).....	5310	.20
㉔	Compensating Cond. (1st. I. F. Sec.).....	.....	.....	⑥⑤	Volume Control & "On-Off" Switch.....	33-5013	.....
㉕	Compensating Cond. (1st. I. F. Tert.).....	31-6001	.....	⑥⑥	Condenser (External to ⑥⑤).....	06713	.45
㉖	Compensating Cond. (2nd. I. F. Pri.).....	31-6000	.....	⑥⑦	Tone Control.....	30-4028	.....
㉖a	Compensating Cond. (2nd. I. F. Sec.).....	.....	.....	⑥⑧	Condensers (Internal to ⑥⑥).....	.....	.....
㉗	2nd. I. F. Transformer.....	32-1174	.....	⑥⑨	Filter Choke.....	32-7056	.....
㉘	Resistor (Brown-Black-Green).....	4409	.20	⑥⑩	Power Transformer (50-60 ω).....	32-7058	.....
㉙	Pilot Lamp (Shadow Tuning Meter); (Part of ㉘).....	.....	.....	⑥⑪	Condenser (Double).....	3793-R	.25
㉚	Shadow Tuning Meter.....	6497	2.25	⑥⑫	Condenser (Electrolytic).....	30-2011	.....
㉛	Resistor (White-White-Orange).....	4411	.20	⑥⑬	Condenser.....	6287-F	.12
㉜	Condenser (Double).....	8035-C	.....	⑥⑭	Condenser (Electrolytic).....	30-2011	.....
㉝	Condenser.....	4519	.18	⑥⑮	Pilot Lamp (Station Selector).....	6608	.12
㉞	Resistor (Yellow-Black-Green).....	6010	.20	⑥⑯	Tube Shield.....	28-1107	.10
㉟	Resistor (Yellow-White-Yellow).....	3769	.20	⑥⑰	Four Prong Socket.....	7545	.08
㊱	Switch (Toggle); (Interstation Noise Supp. Ckt.).....	42-1036	.....	⑥⑱	Five Prong Socket.....	7546	.10
㊱	Resistor (Yellow-White-Yellow).....	4517	.20	⑥⑲	Six Prong Socket.....	7547	.10
㊲	Resistor (Red-Black-Green).....	5872	.20	⑥⑳	Seven Prong Socket.....	27-6005	.10
				⑦①	Knob (large).....	03063	.08
				⑦②	Knob (small).....	03064	.06

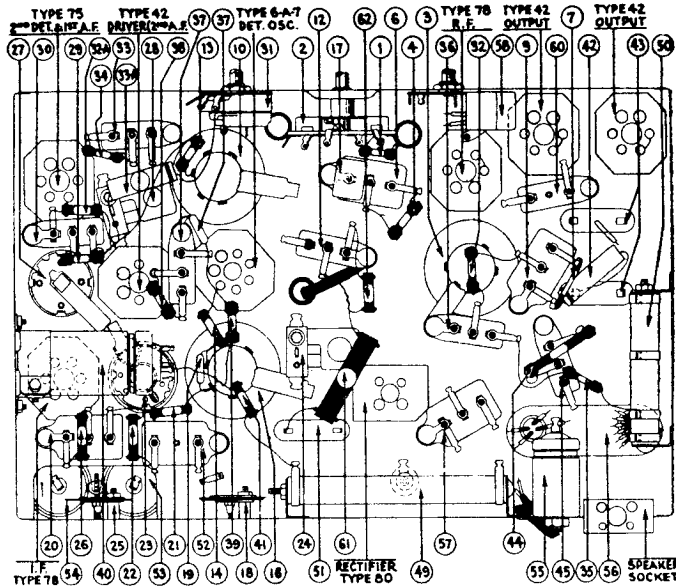
NOTE: Model 17-121 uses a Type 80 tube in lieu of 5Z3; Power Transformer (50-60 ω) (68) No. 32-7080; Resistors (Brown-Black-Orange) No. 33-1024 in both (59) and (60); Electrolytic Condensers (70) No. 6707 and (72) No. 7464; Speaker "K-17"; Speaker Socket No. 7084; Speaker Cable L-1632

MODEL 18



NOTE: In later production of (29), (30), and ground. (33-a Resistor (240,000) (Red-Yellow-Yellow), Part No. 4410—(not shown in Schematic), is connected between line running from (13) to junction of (29), (30), and ground. (33-a Condenser (.05), Part No. 30-4020—(not shown in Schematic), is connected between high side of Volume Control (30) and junction of (29), (30), and ground. External Condenser in Tone Control circuit has but one section (in later production),—the .05 mfd. on point two. Point one goes directly to (32). NOTE: Values of primary and secondary of (46) Output Transformer, and value of (47) Voice Coil, are given in impedance at 200 cycles, 30 volts. The D. C. resistance of the primary is 350 ohms; of the secondary, 40 ohm. D. C. resistance of (47) is 1.11 ohm.

MODEL 18



REPLACEMENT PARTS FOR MODEL 18

No. on Fig.	Description	Part No.	List Price	No. on Fig.	Description	Part No.	List Price	No. on Fig.	Description	Part No.	List Price				
①	Resistor (10,000) (Brown-Black-Orange).....	4412	\$0.24	28	1st I. F. Transformer 32-1238		.45	40	Filter Condenser (Electrolytic) (A=1.0 mfd.; B=1.0 mfd.; C=2.0 mfd. 30-2029	1.00	62	Resistor (50,000) (Green Brown-Orange).....	4518	.24	
②	Wave Band Switch... 42-1046		.70	29	Compensating Condenser (1st I. F. Primary).....	04000-M	.19	41	Resistor (50,000) (Green-Brown-Orange).....	4518	.24	63	Shadow Tuning Meter 6497	2.70	
③	Antenna Transformer 32-1253		.65	30	Compensating Condenser (1st I. F. Secondary).....	04000-X	.19	42	Condenser (.006)....	30-4024	.36	64	Pilot Lamp (Part of 63) Shadow Tuning Meter).....		
④	Resistor (70,000) (Violet-Black-Orange).....	5385	.24	31	Resistor (2,500) (Red-Green-Red).....	7775	.24	43	Input Transformer..	32-7114	1.75	65	Pilot Lamp (Station Selector).....	6608	.14
⑤	Tuning Condenser Assembly.....	31-1110	3.75	32	2nd I. F. Transformer 32-1258		.45	44	Resistor (10,000) (Brown-Black-Orange).....	3524	.24		Shield "Push-on Button" for sub-base holes, over 24 and 25 Compensating Condensers. W-775 per C 1.50		
⑥	Condenser (Double) (.05-.05).....	3615-AM	.24	33	Compensating Condenser (2nd, I. F. Primary).....	04000-A	.14	45	Condenser (.01).....	3903-P	.24		Tube Shield	28-1107	.12
⑦	Resistor (Flexible Wire-Wound) (200) (Red-Black-Brown) 7217		.18	34	Resistor (.1 meg.) (White-White-Orange).....	4411	.24	46	Output Transformer 32-7078		1.25		Four-prong Tube Socket.....	7544	.07
⑧	Compensating Condenser (Ant.; H. F.; Part of 5).....			35	Condenser (Double) (.00011-.00011) ..	8035-K	.25	47	Voice Coil and Cone Assembly.....	02625	.66		Six-prong Tube Socket 7547		.12
⑨	Condenser (.18).....	4989-AC	.24	36	Volume Control and "On-Off" Switch..	33-5024	1.00	48	Speaker Field Coil and Pot Assembly (H-13).....	36-3104			Seven-prong Tube Socket.....	27-6005	.12
⑩	Detector Transformer 32-1256		.45	37	Resistor (10,000) (Brown-Black-Orange).....	4412	.24	49	Resistor (Wire-Wound) (6,500)....	33-3033	.25		Speaker Socket.....	4957	.10
⑪	Compensating Condenser (Det.; Part of 5).....			38	Resistor (240,000) (Red-Yellow-Yellow) 4410		.24	50	Voltage Divider Resistor (Wire-Wound)	33-3034	.20		Dial Scale (Station Selector).....	27-5013	.20
⑫	Condenser (.05).....	3615-AA	.24	39	Condenser (.01).....	3903-Z	.17	51	Filter Choke.....	32-7115	1.50		Mounting Bolt (Chassis).....	W-567 per C 2.88	
⑬	Resistor (2.0 meg.) (Red-Black-Green) 5872		.24	40	Condenser (.05).....	30-4020	.14	52	Condenser (.25).....	6287-N	.20		Mounting Washer (Chassis).....	5189	.04
⑭	Resistor (50,000) (Green-Brown-Orange).....	4518	.24	41	Resistor (1.0 meg.) (Brown-Black-Green).....	4409	.24	53	Condenser (Electrolytic) (8.0).....	6706	1.80		Mounting Washer (Chassis).....	5058 per C .82	
⑮	Compensating Condenser (Osc.; H. F.; Part of 5).....			42	Resistor (.1 meg.) (White-White-Orange).....	4411	.24	54	Condenser (Electrolytic) (8.0).....	30-2025	1.15		Knob (large).....	03063	.10
⑯	Oscillator Transformer.....	32-1257	.50	43	Condenser (.09).....	4989-N	.24	55	Condenser (Electrolytic) (10.0).....	30-2003	.84		Knob (small).....	03064	.07
⑰	Condenser (.0025)....	7006	.36	44	Condenser (.00011) ..	4519	.22	56	Power Transformer (50-60 ~).....	32-7111	5.75		Bezel.....	6418	.24
⑱	Compensating Condenser (Osc.; L. F.) 04000-R		.42	45	Condenser (.015)....	3793-AB	.20	57	Condenser (Double) (.015-.015).....	3793-R	.30		Model 18—Code 121 only		
⑲	Condenser (.00011)....	4519	.22	46	Resistor (.5 meg.) (Yellow-White-Yellow).....	4517	.24	58	Tone Control.....	30-4073	.55		Speaker (K-17) Output transformer..	32-7078	1.25
⑳	Condenser (Double) (.5-15).....	6287-M	.25	47	Resistor (.1 meg.) (White-White-Orange).....	4411	.24	59	Condensers (Internal to 58).....				Speaker (K-17) Voice Coil and Cone Assembly.....	36-3020	.48
㉑	Resistor (20,000) (Red-Black-Orange) 6650		.30	48	Resistor (.1 meg.) (White-White-Orange).....	4411	.24	60	Condenser (External to 58).....	3615-G	.19		Speaker Field and Pot Assembly.....	36-3104	
㉒	Resistor (20,000) (Red-Black-Orange) 6650		.30					61	Resistor (32,000) (Orange-Red-Orange).....	33-1026	.30		Speaker Socket Hole Cover.....	7084 per C .90	
													Speaker Cable.....	L-1632	.24

NOTE: The following parts are different in Model 18, Code 123

53 Electrolytic condenser becomes 30-2045.

54 Electrolytic condenser becomes 30-2014.

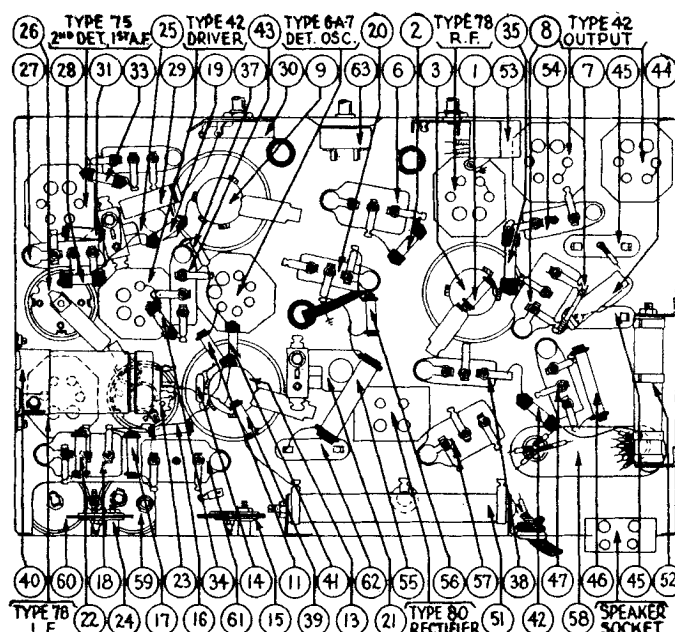
5 Tuning condenser assembly becomes 31-1117.

[illegible]

NOTE: In current production—**32**—a Resistor (240,000) (Red-Yellow-Yellow), Part No. 4410—(not shown in Schematic)

MODEL 18

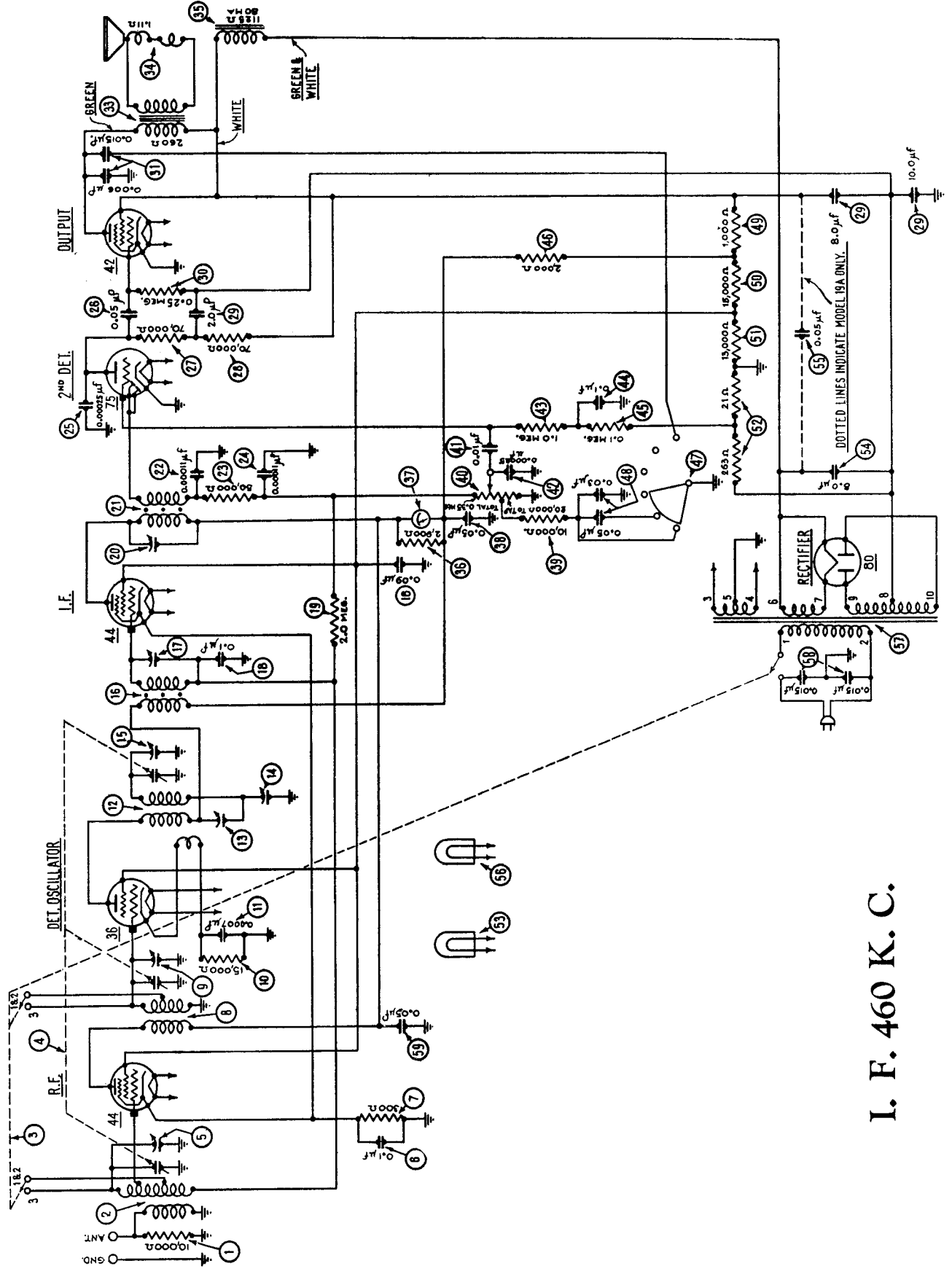
(Code 124)



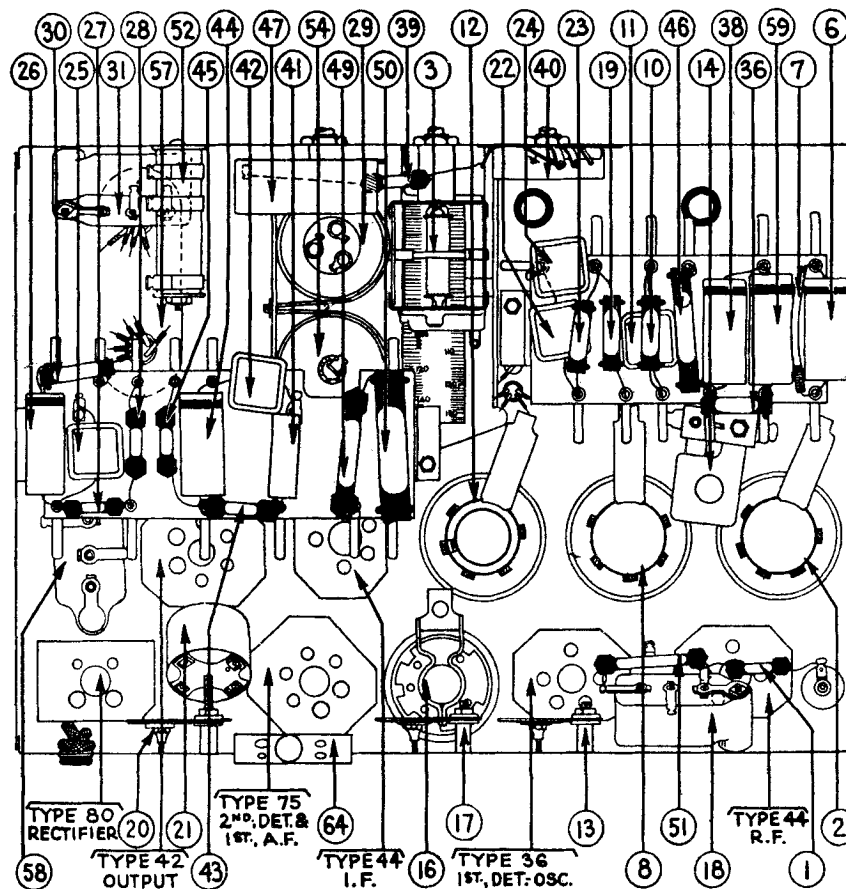
Replacement Parts for Model 18 (Code 124)

No. on Figs.	Description	Part No.	List Price					
1	Resistor (10,000 ohms) (Brown-Black-Orange).....	33-1000	\$0.25	42	Resistor (.5 Meg.) (Yellow-White-Yellow).....	4517	.25	
2	Resistor (70,000 ohms) (Violet-Black-Orange).....	5385	.25	43	Condenser (.015 Mfd. Bakelite).....	3793AB	.35	
3	Antenna Transformer.....	32-1396	.60	44	Condenser (.006 Mfd. Tubular Paper).....	30-4024	.40	
4	Tuning Condenser Assembly.....	31-1196	6.00	45	Input (Audio) Transformer.....	32-7114	2.00	
5	Compensating Condenser (Ant.).....	Part of 4	....	46	Resistor (10,000 ohms) (Brown-Black-Orange).....	3524	.25
6	Condenser (.05 Twin-Bakelite Block).....	3615AM	.40	47	Condenser (.01 Mfd. Bakelite Block).....	3903-P	.25	
7	Resistor (200 ohms Flexible Wire-wound).....	7217	.20	48	Output Transformer.....	32-7078	1.40	
8	Condenser (.09 Twin-Bakelite Block).....	4989AC	.40	49	Voice Coil and Cone Assembly { H-13.....	02825	.80	
9	Detector Transformer.....	32-1397	.50			K-17.....	36-3159	.50
10	Compensating Condenser (Det.).....	Part of 4	....	50	Field Coil and Pot. Assembly.....	36-3104	2.70
11	Resistor (50,000 ohms) (Green-Brown-Orange).....	4518	.25	51	Resistor (B) (6500 ohms Wire-wound).....	33-3033	.30	
12	Compensating Condenser (Osc. H. F.).....	Part of 4	....	52	Resistor (Voltage Divider—9.5, 112, 84 ohms Wire-wound).....	33-3034	\$0.20
13	Oscillator Transformer.....	32-1398	.45	53	Tone Control.....	30-4073	.75	
14	Condenser (.00011 Mfd. Mica).....	4519	.35	54	Condensers (in Tone Control).....	Inside 53	....
15	Compensating Condenser (Osc. L. F.).....	04000R	.45	55	Resistor (32,000 ohms) (Orange-Red-Orange).....	33-1026	.35	
16	Resistor (20,000 ohms) (Red-Black-Orange).....	6650	.25	56	Resistor (50,000 ohms) (Green-Brown-Orange).....	4518	.25	
17	Resistor (20,000 ohms) (Red-Black-Orange).....	6650	.25	57	Condenser (Twin .015 Mfd. Bakelite Block).....	3793-R	.40	
18	Condenser (Double: .05—.15 Bakelite Block).....	6287M	.40	58	Power Transformer.....	32-7111	5.75	
19	Resistor (2 Meg.) (Red-Black-Green).....	5872	.25	59	Condenser (Electrolytic 8 and 10 Mfd.).....	30-2045	1.95	
20	Condenser (.05 Mfd. Bakelite Block).....	3615AA	.35	60	Condenser (Electrolytic 8 Mfd.).....	30-2025	2.00	
21	Compensating Condenser (1st I. F. Pri.).....	04000M	.20	61	Condenser (.25 Mfd. Bakelite Block).....	6287-N	.40	
22	Resistor (2500 ohms) (Red-Green-Red).....	7775	.25	62	Filter Choke.....	32-7115	1.80	
23	1st I. F. Transformer.....	32-1288	.55	63	On-Off Switch.....	42-1064	.40	
24	Compensating Condenser (1st I. F. Secondary).....	04000X	.20	64	Pilot Lamp (Station Selector).....	6608	.11	
25	Compensating Condenser (2d I. F. Primary).....	04000A	.15	65	Pilot Lamp (Shadowmeter).....	Part of 36	....
26	2d I. F. Transformer.....	32-1258	.55	66	Resistor (2900 ohms) (Red-White-Red).....	5309	.25	
27	Condenser (.00011 Mfd. Twin-Bakelite Block).....	8035-K	\$0.25		A. C. Cord and Plug Assembly.....	L-943A	.60	
28	Resistor (.1 Meg. White-White-Orange).....	4411	.25		Tube Shield.....	28-1107	.10	
29	Condenser (.05 Mfd. Tubular Paper).....	30-4020	.35		4 Prong Socket.....	7544	.10	
30	Volume Control (350,000 ohms Tapped at 75,000).....	33-5069	1.00		6 Prong Socket.....	7547	.11	
31	Resistor (.25 Meg.) (Red-Yellow-Yellow).....	4410	.25		7 Prong Socket.....	27-6005	.11	
32	Condenser (.01 Mfd. Bakelite Block).....	3903-Z	.25		Speaker Socket.....	4957	.10	
33	Resistor (1. Meg.) (Brown-Black-Green).....	4409	.25		Knob (Large).....	27-4051	.10	
34	Resistor (.5 Meg.) (Yellow-White-Yellow).....	4517	.25		Knob (Small).....	27-4052	.10	
35	Resistor (10,000 ohms) (Brown-Black-Orange).....	4412	.25		Chassis Mfg. Screw.....	W-1345-A	2.75C	
36	Shadowmeter.....	45-2028	2.50		Chassis Mfg. Washer.....	29-2089	.35C	
37	Condenser (.00011 Mica).....	4519	.35		Chassis Mfg. Foot (Rubber).....	27-4116	.05	
38	Condenser (.09 Mfd.) (Bakelite Block).....	4989-N	.35		Chassis Mfg. Foot Plate.....	27-7497	.35C	
39	Resistor (50,000 ohms) (Green-Brown-Orange).....	4518	.25		Dial Assembly.....	31-1207	.50	
40	Condenser (Electrolytic—1, 1, 2 Mfd.).....	30-2029	1.20		Dial Scale.....	27-5049	.25	
41	Resistor (.1 Meg.) (White-White-Orange).....	4411	.25					

MODEL 19 (Code 128)



MODEL 19 (Code 128)



REPLACEMENT PARTS FOR MODEL 19-128

No. on Figs. 2 and 3	Description	Part No.	No. on Figs. 2 and 3	Description	Part No.
①	Resistor (10,000 ohms).....	33-1000	③⑤	Speaker field coil and pot assembly (H-16)...	36-3218
②	Antenna transformer.....	32-1062	③⑥	Resistor (2900 ohms).....	5309
③	Combined on-off and wave band switch...	42-1017	③⑦	Shadow meter.....	6497
④	Tuning condenser assembly.....	31-1103	③⑧	Condenser (.05 mfd.).....	30-4123
⑤	Compensating condenser (ant.).....	Part of ④	③⑨	Resistor (10,000 ohms).....	4412
⑥	Condenser (.1 mfd.).....	30-4122	④①	Volume control.....	33-5000
⑦	Resistor (wire wound 300 ohms flex.).....	33-3010	④②	Condenser (.01 mfd.).....	30-4124
⑧	Detector transformer.....	32-1063	④③	Condenser (250 mmf.).....	5858
⑨	Compensating condenser (Det.).....	Part of ④	④④	Resistor (1.0 meg.).....	4409
⑩	Resistor (15,000 ohms).....	6208	④⑤	Condenser (.1 mfd.).....	30-4122
⑪	Condenser (700 mmf.).....	5863	④⑥	Resistor (.1 meg.).....	4411
⑫	Oscillator transformer.....	06620	④⑦	Resistor (2000 ohms).....	4515
⑬	Compensating condenser (1st IF pri.).....	04000M	④⑧	Tone control.....	38-5519
⑭	Compensating condenser (osc. LF).....	04000S	④⑨	Condensers (inside ④⑦).....	.....
⑮	Compensating condenser (osc. HF).....	Part of ④	④⑩	Resistor (1000 ohms).....	4590
⑯	1st IF transformer.....	32-1315	④⑪	Resistor (15,000 ohms).....	5718
⑰	Compensating condenser (1st IF sec.).....	04000M	④⑫	Resistor (13,000 ohms).....	3766
⑱	Condenser (.1 mfd.).....	4989AK	④⑬	Resistor (wire wound tapped, 263,21 ohms)...	33-3069
⑲	Resistor (2.0 meg.).....	5872	④⑭	Pilot lamp (station selector).....	6608
⑳	Compensating condenser (2d IF pri.).....	04000A	④⑮	Condenser (elec. filter 8 mfd.).....	30-2026
㉑	2d IF transformer.....	06622	④⑯	Condenser .05 mfd. (used on 19A only)....	30-4020
㉒	Condenser (110 mmf.).....	30-1006	④⑰	Pilot lamp.....	Part of ④⑰
㉓	Resistor (50,000 ohms).....	4518	④⑱	Power transformer.....	32-7170
㉔	Condenser (110 mmf.).....	30-1006	④⑲	Condenser (double .015-.015 mfd.).....	3793E
㉕	Condenser (250 mmf.).....	5858	④⑳	Condenser (.05 mfd.).....	30-4123
㉖	Condenser (.05 mfd.).....	30-4123	④㉑	Tube shield.....	8005
㉗	Resistor (70,000 ohms).....	5385	④㉒	Four prong tube socket.....	7544
㉘	Resistor (70,000 ohms).....	5385	④㉓	Five prong tube socket.....	7546
㉙	Condenser (elec.—2.0, 8.0, 10.0 mfd.).....	30-2062X	④㉔	Six prong tube socket.....	7547
㉚	Resistor (.25 meg.).....	4410	④㉕	Speaker socket.....	7828
㉛	Condenser (.006-.015 mfd.).....	7625D	④㉖	Knob (large).....	27-4037
㉜	Output transformer (H-16).....	32-7178	④㉗	Knob (small).....	27-4038
㉝	Speaker voice coil and cone (H-16).....	02625	④㉘	Drum assembly (with scale).....	31-1025

RESISTOR VALUES (OHMS)

1	10,000
2	15,000
3	20,000
4	25,000
5	30,000
6	35,000
7	40,000
8	45,000
9	50,000
10	55,000
11	60,000
12	65,000
13	70,000
14	75,000
15	80,000
16	85,000
17	90,000
18	95,000
19	100,000
20	105,000
21	110,000
22	115,000
23	120,000
24	125,000
25	130,000
26	135,000
27	140,000
28	145,000
29	150,000
30	155,000
31	160,000
32	165,000
33	170,000
34	175,000
35	180,000
36	185,000
37	190,000
38	195,000
39	200,000
40	205,000
41	210,000
42	215,000
43	220,000
44	225,000
45	230,000
46	235,000
47	240,000
48	245,000
49	250,000
50	255,000
51	260,000
52	265,000
53	270,000
54	275,000
55	280,000
56	285,000
57	290,000
58	295,000
59	300,000
60	305,000
61	310,000
62	315,000
63	320,000
64	325,000
65	330,000
66	335,000
67	340,000
68	345,000
69	350,000
70	355,000
71	360,000
72	365,000
73	370,000
74	375,000
75	380,000
76	385,000
77	390,000
78	395,000
79	400,000
80	405,000
81	410,000
82	415,000
83	420,000
84	425,000
85	430,000
86	435,000
87	440,000
88	445,000
89	450,000
90	455,000
91	460,000
92	465,000
93	470,000
94	475,000
95	480,000
96	485,000
97	490,000
98	495,000
99	500,000

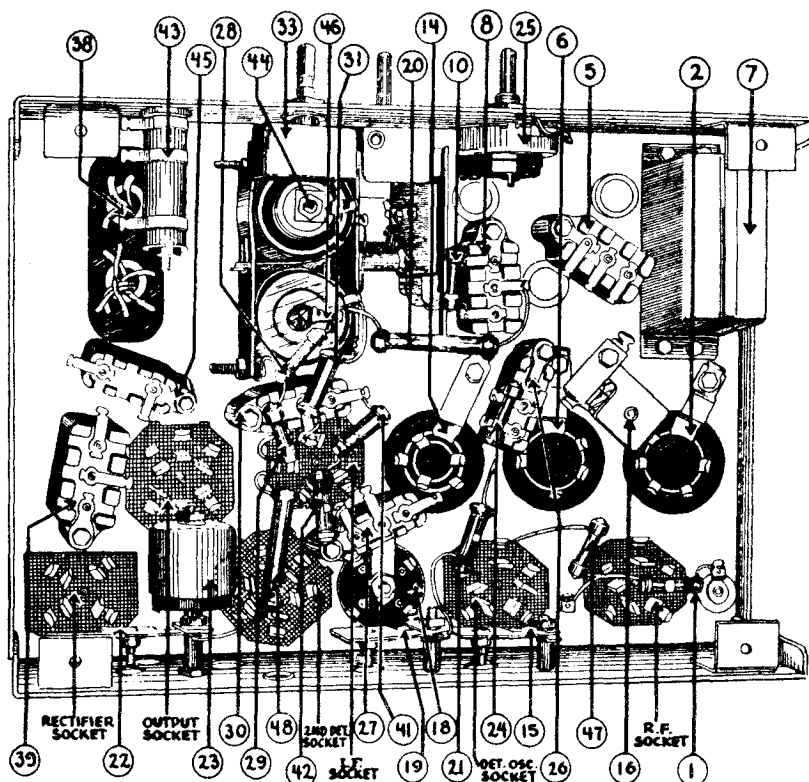
FIXED CONDENSER VALUES (MFD.)

1	0.001
2	0.002
3	0.005
4	0.01
5	0.02
6	0.05
7	0.1
8	0.2
9	0.5
10	1.0
11	2.0
12	5.0
13	10.0
14	20.0
15	50.0
16	100.0
17	200.0
18	500.0
19	1000.0
20	2000.0
21	5000.0
22	10000.0
23	20000.0
24	50000.0
25	100000.0
26	200000.0
27	500000.0
28	1000000.0
29	2000000.0
30	5000000.0
31	10000000.0
32	20000000.0
33	50000000.0
34	100000000.0
35	200000000.0
36	500000000.0
37	1000000000.0
38	2000000000.0
39	5000000000.0
40	10000000000.0

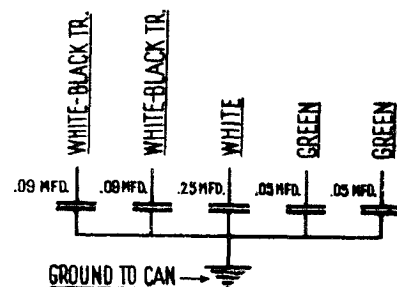
NOTE: SHADOW TUNING FOR MODEL 19 ONLY.

A.C. RECEPTACLE FOR MODEL 19

Models 19 and 89



Bottom View of Chassis, Showing Parts

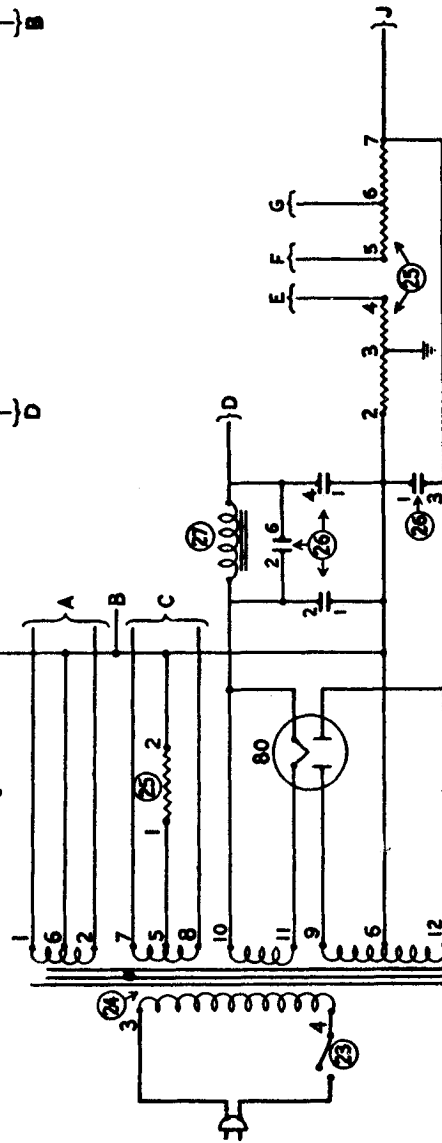


Internal Connections Filter Condenser.

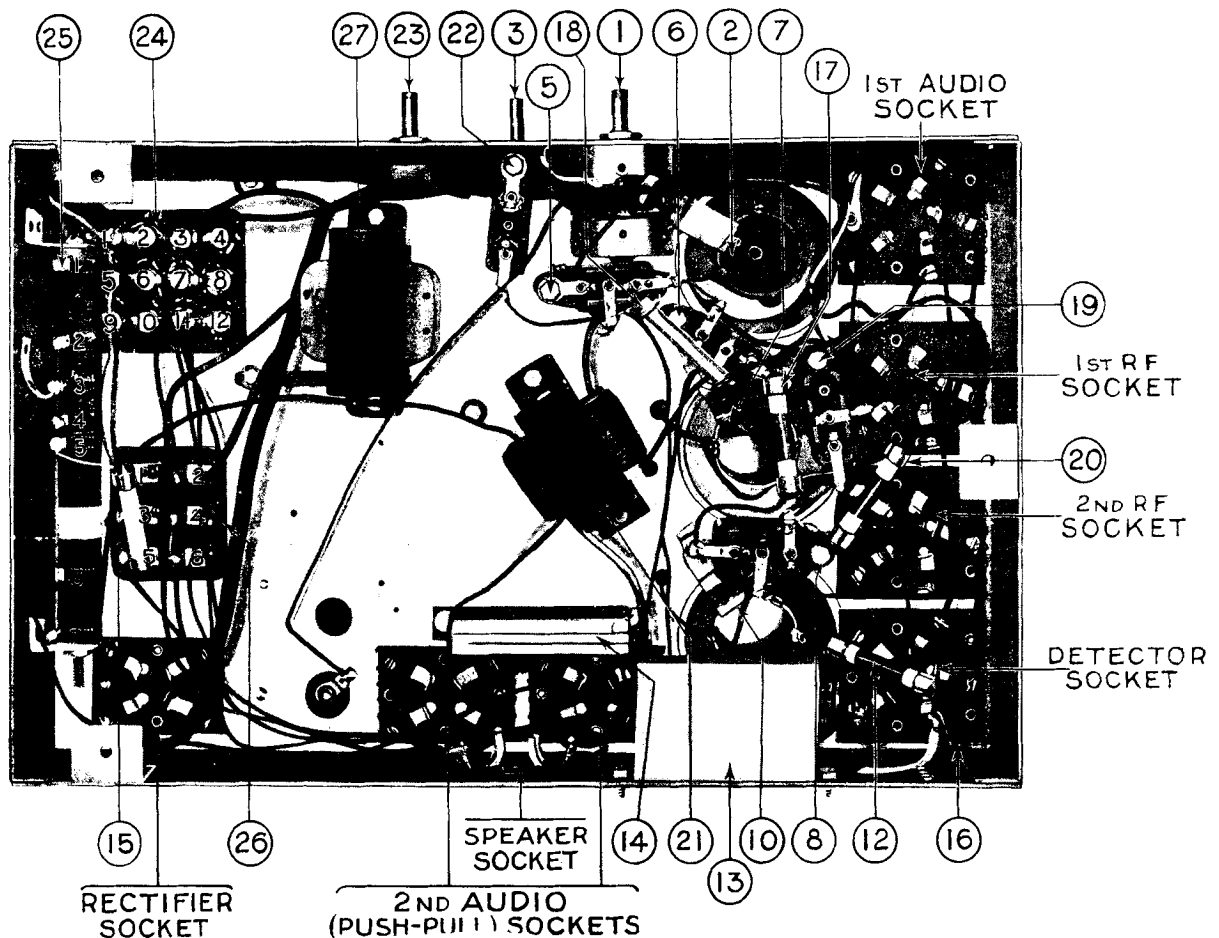
Replacement Parts for Models 19 and 89

	Part No.
① Resistor (10,000 Ohms) Brown—Black—Orange	4412
② Antenna Transformer	06619
③ Tuning Condenser Assembly	06577
④ Compensating Condenser—(R.F. Part of Tuning Condenser Assembly)	
⑤ Condenser and Resistor—(.09 Mfd. and 200Ω)	4989-W
⑥ Interstage Transformer	06662
⑦ Filter Cond. Bank (.09—.09—.05—.05—.25)	06624
⑧ Condenser (Double—.09 and .0007 Mfd.)	8174-B
⑨ Compensating Condenser—(R.F. Part of Tuning Condenser Assembly)	
⑩ Resistor (15,000 Ohms) Brown—Green—Orange	6208
⑪ Pilot Lamp	6608
⑫ Dial Scale	7882
⑬ Pilot Lamp—(Shadow Tuning)	6608
⑭ Oscillator Transformer	06620
⑮ Compensating Condenser — (1st I.F. Primary)	04000-M
⑯ Compensating Condenser — (Low Frequency)	04000-S
⑰ Compensating Condenser—(R.F. Part of Tuning Condenser Assembly)	
⑱ First I.F. Transformer	06621
⑲ Compensating Condenser (1st I.F. Secondary)	04000-M
⑳ Resistor (5,000 Ohms) Green—Black—Red	3526
㉑ Resistor (2,000,000 Ohms) Red—Black—Green	5872
㉒ Compensating Cond. (2nd I.F. Primary)	04000-A
㉓ Second I.F. Transformer	06622
㉔ Resistor (51,000 Ohms) Green—Brown—Orange	8098
㉕ Volume Control and A.C. Switch	8003
㉖ Condenser (Double—.00011 & .00011 Mfd.)	8035-C
㉗ Condenser (.01 Mfd.)	3903-AB
㉘ Resistor (70,000 Ohms) Violet—Black—Orange	5385

	Part No.
㉙ Resistor (70,000 Ohms) Violet—Black—Orange	5385
㉚ Condenser (.01 Mfd.)	3903-T
㉛ Resistor (490,000 Ohms) Yellow—White—Yellow	4517
㉜ Bezel	8055
㉝ Tone Control	06764
㉞ Output Transformer	2580
㉟ Voice Coil and Cone Assembly	02823
㊱ Speaker Field and Bucking Coil Assembled with Pot (K-7)	02761
㊲ Switch (A.C.) Part of Vol. Control Assembly	
㊳ Power Transformer (50-60 Cycles, 115 Volts)	8046
Power Transformer (25-40 Cycles—115 Volts)	8047
Power Transformer (50-60 Cycles—230 Volts)	8048
㊴ Condenser (Double—.015 and .015 Mfd.)	3793-E
㊵ Shadow Tuning	6497-G
㊶ Resistor (99,000 Ohms) White—White—Orange	4411
㊷ Resistor (1,000,000 Ohms) Brown—Black—Green	4409
㊸ B.C. Resistor (235 Ohms and 32 Ohms—Wire Wound)	7998
㊹ Electrolytic Condenser—6 Mfd.	8165
㊺ Condenser (.05 Mfd.)	3615-E
㊻ Electrolytic Condenser—6 Mfd.	8166
㊼ Resistor (51,000 Ohms) Green—Brown—Orange	4518
㊽ Resistor (32,000 Ohms) Orange—Red—Orange	3525
㊾ Tube Shield	8005
㊿ Knob (Large)	03063
Knob (Small)	03064
Knob Spring	5262
Grid Clip	4897
Four Prong Socket	7544
Five Prong Socket	7546
Six Prong Socket	7547
Pilot Lamp Shield	5760

[illegible]

Models 20, 20-A and 21



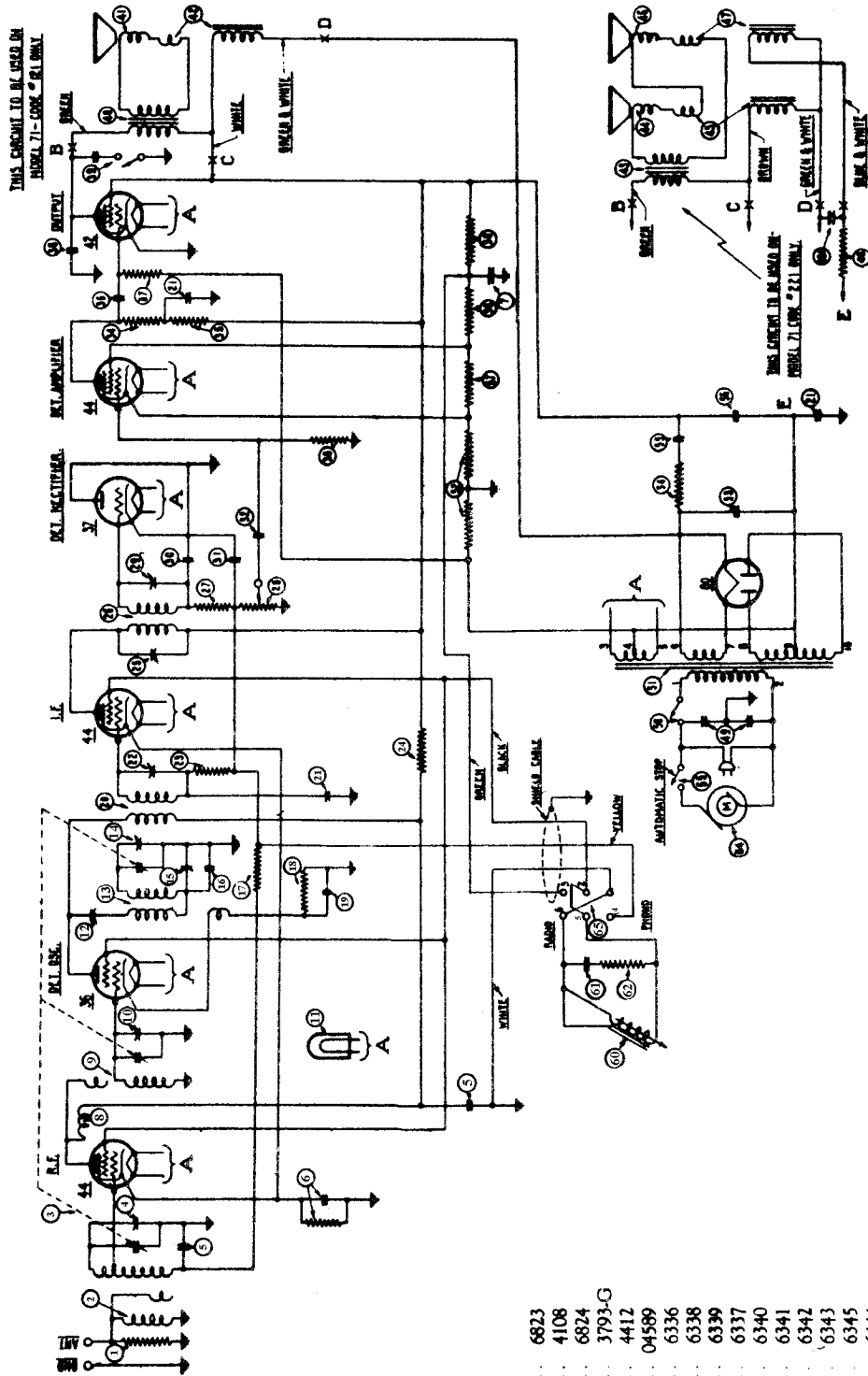
REPLACEMENT PARTS—MODELS 20, 20 A and 21

No.	Description	Part No.	No.	Description	Part No.
①	Volume Control	4094	②④	Power Transformer (50-60 cycle)	4234
②	First R. F. Transformer	3884-N		Power Transformer (25-60 cycle)	4268
③	Tuning Condenser	4200-A	②⑤	B. C. Resistor	4230
④	First Compensating Condenser (Part of Tuning Condenser Assembly)		②⑥	Filter Condenser (50-60 cycle)	4235
⑤	By-Pass Condenser (.05)	3615-J		Filter Condenser (25-60 cycle)	4269
⑥	By-Pass Condenser (.05)	3615-M	②⑦	Filter Choke	4231
⑦	Second R. F. Transformer	3884-P	②⑧	Push-Pull Output Transformer	2766
⑧	By-Pass Condenser (.05) and Resistor	3615-K	②⑨	Voice Coil and Cone	2769-B
⑨	Second Compensating Con- denser		③⑩	Field Coil	2768
	(Part of Tuning Condenser Assembly)			Speaker Plug and Cord	L-1124-A
⑩	Third R. F. Transformer	3884-P		Four-Prong Socket Assembly	3977-A
⑪	Third Compensating Condenser (Part of Tuning Condenser Assembly)			Speaker Socket	3977-B
⑫	Resistor (50,000)	4237		Five-Prong Socket Assembly	3979-A
⑬	By-Pass Condenser (.5)	3583		R. F. Tube Shield	4228-A
⑭	By-Pass Condenser (double .25)	3557		Volume Control Insulators	4092
⑮	Resistor (250,000)	3768		Volume Control Insulators	4286
⑯	By-Pass Condenser (.00025)	3082		Tuning Condenser Dial Scale	4261
⑰	Resistor (500,000)	3769		A. C. Cord	L-943-A
⑱	Resistor (100,000)	3767		Knob (Large)	4289-A
⑲	Condenser (.01)	3903-F		Knob (Small)	4290-A
⑳	Resistor (500,000)	3769		Cabinet	34000
㉑	Push-pull Input Transformer	4232		Bezel Plate	4252
㉒	By-Pass Condenser (.05)	3615-L		Fahnstock Clip	L-1126
㉓	On-off Switch	4095		Finishing Rosettes	4267
				Speaker Mounting Screws (three used)	W-493
				Speaker Mounting Screws (one used)	W-483
				Chassis Hold-Down Bolts	W-490
				Feet	W-353

Note:—R. F. Transformers ①, ⑦ and ⑩ should not be confused with R. F. Transformers ②, ④, ⑥ and ⑧ on Bulletin 28. They are not interchangeable.

Model 22L

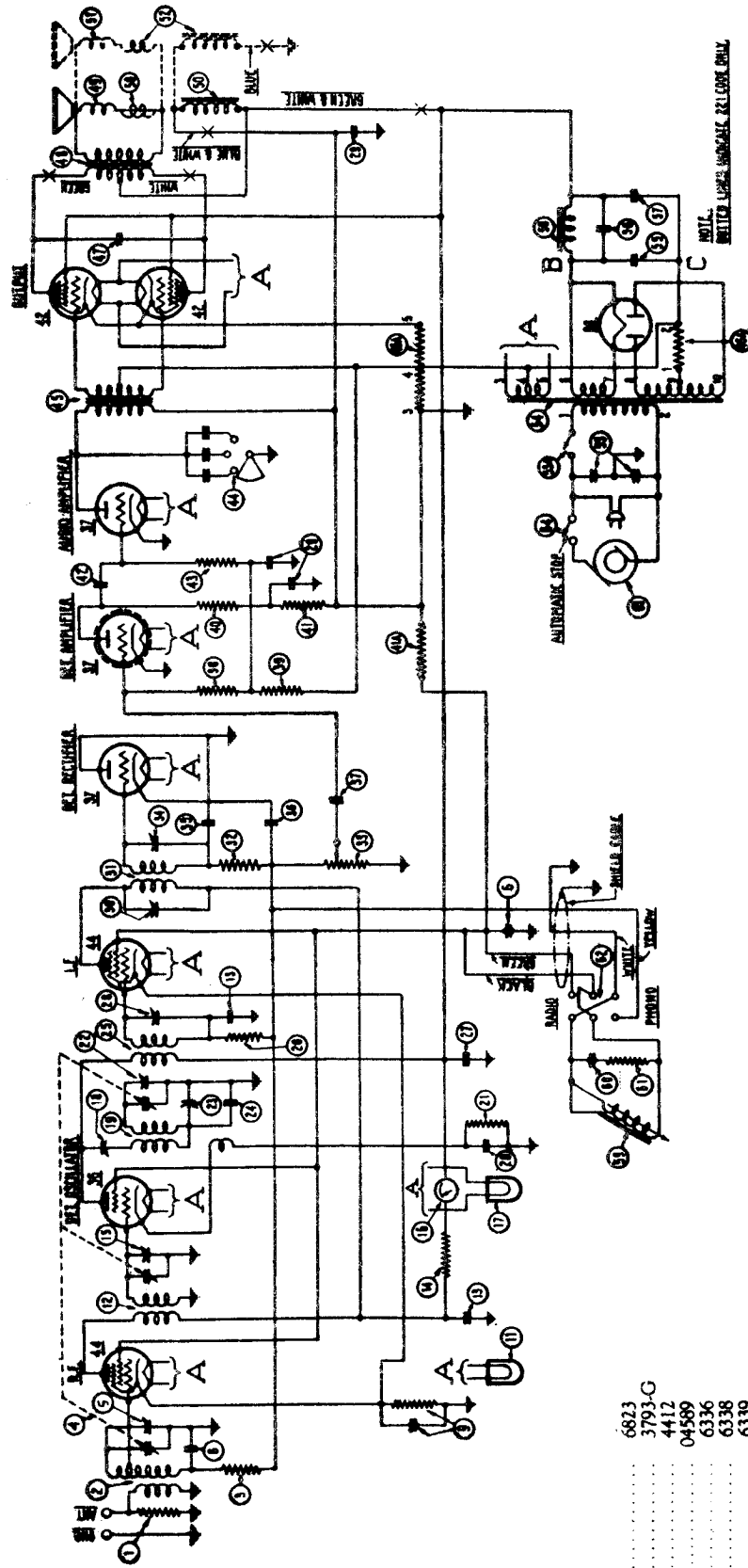
Radio-Phonograph



The Model 22L has the same radio chassis as the model 71-221 except for the additional wiring of the phonograph equipment.

(60)	Electric pickup	6823
	Needle screw	4108
	Tone Arm complete with pickup	6824
(61)	Condenser (.015 Mfd.)	3793-G
(62)	Resistor (10,000 ohms)	4412
(63)	Radio-phonograph Switch	04589
(64)	Motor (115 volts 60 cycles)	6336
	Motor (115 volts 50 cycles)	6338
	Motor (115 volts 40 cycles)	6339
	Motor (115 volts 25 cycles)	6337
	Motor (230 volts 60 cycles)	6340
	Motor (230 volts 50 cycles)	6341
	Motor (230 volts 40 cycles)	6342
	Motor (230 volts 25 cycles)	6343
(65)	Motor Switch	6345
	Switch Plate	6444
	Switch Indicator	4227
	Switch Knob	03437
	Needle Cup (2 used)	4101
	Used Needle cup	4102
	Motor Speed Indicator Plate	6347
	Turntable	6344
	Cord Connector Plug	4091
	Cord Connector Assembly	4124-A

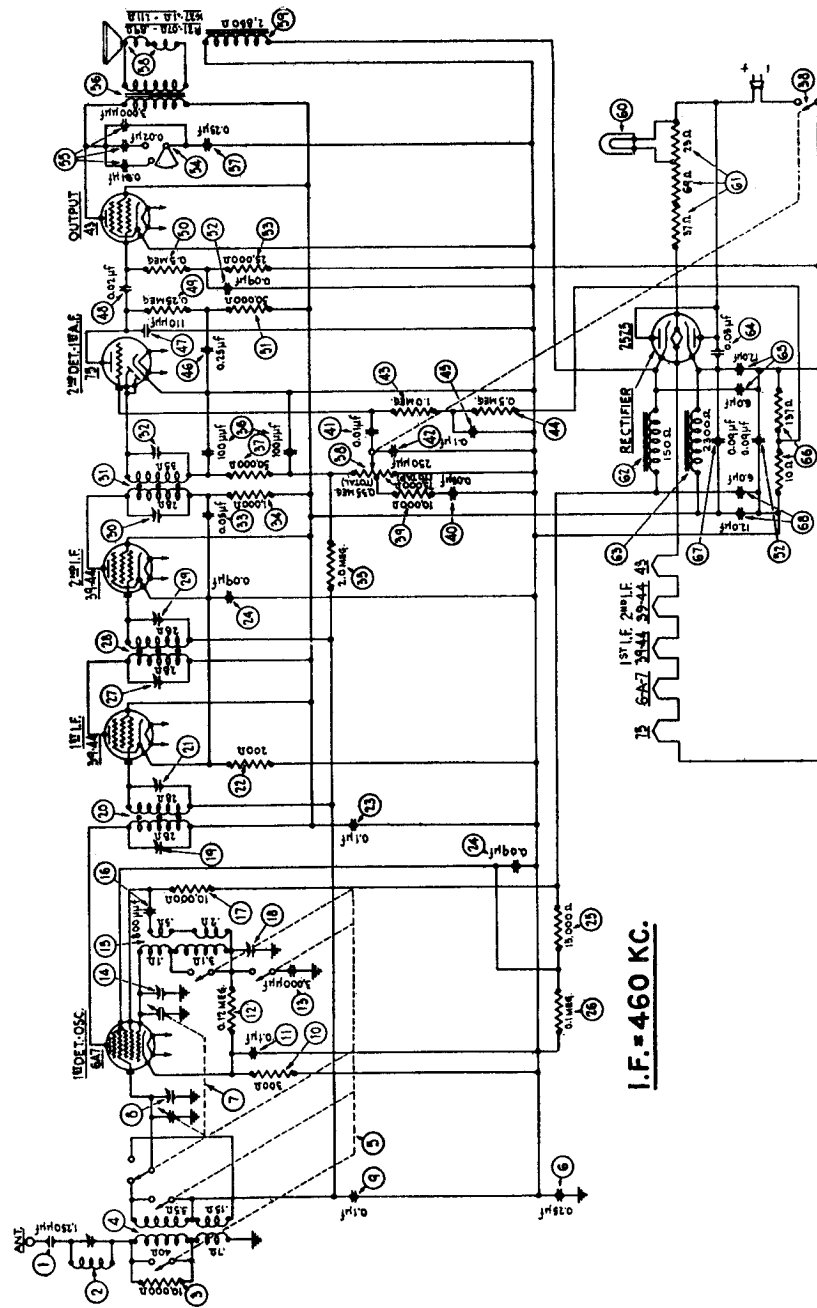
Model 23X Radio-Phonograph



(60)	Electric Pickup	6823
(61)	Condenser (.015 Mfd.)	3793-G
(62)	Resistor 10,000 ohms	4412
(63)	Radio-phonograph switch	04589
(64)	Motor (115 volts 60 cycles)	6336
	Motor (115 volts 50 cycles)	6338
	Motor (115 volts 40 cycles)	6339
	Motor (115 volts 25 cycles)	6337
	Motor (230 volts 60 cycles)	6340
	Motor (230 volts 50 cycles)	6341
	Motor (230 volts 40 cycles)	6342
	Motor (230 volts 25 cycles)	6343
(65)	Motor Switch	6345
	Needle Screw	4108
	Tone Arm complete with pickup	6824
	Switch plate	6444
	Switch Indicator	4227
	Switch knob	03437
	Needle Cup (2 used)	4101
	Used Needle Cup	4102
	Motor Speed Indicator Plate	6347
	Turntable	6344
	Cord Connector Plug	4091
	Cord Connector Assembly	4124-A
	Rubber Washer (4 used for motor board)	4074

The model 23X has the same radio chassis as the model 91-221 except for the additional wiring of the phonograph equipment.

MODEL 28 (A.C. - D.C.)



Waveband Switch Shown in Standard Broadcast Position

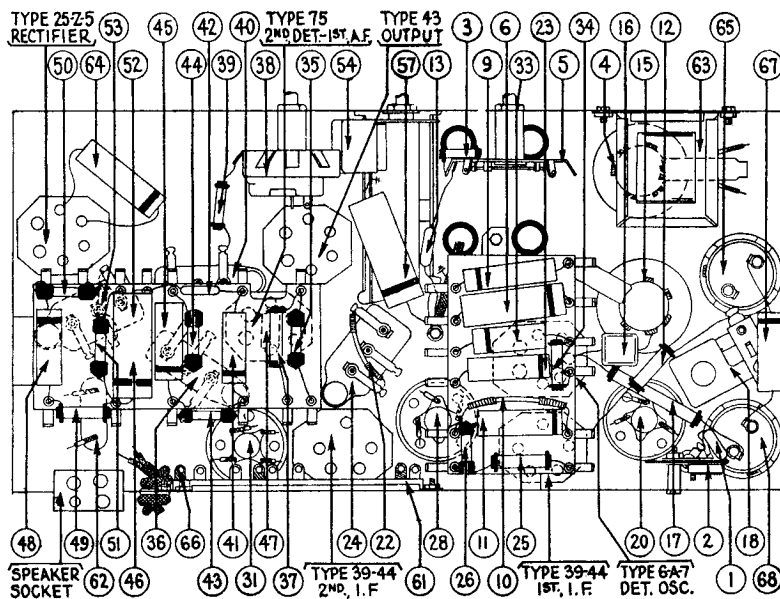


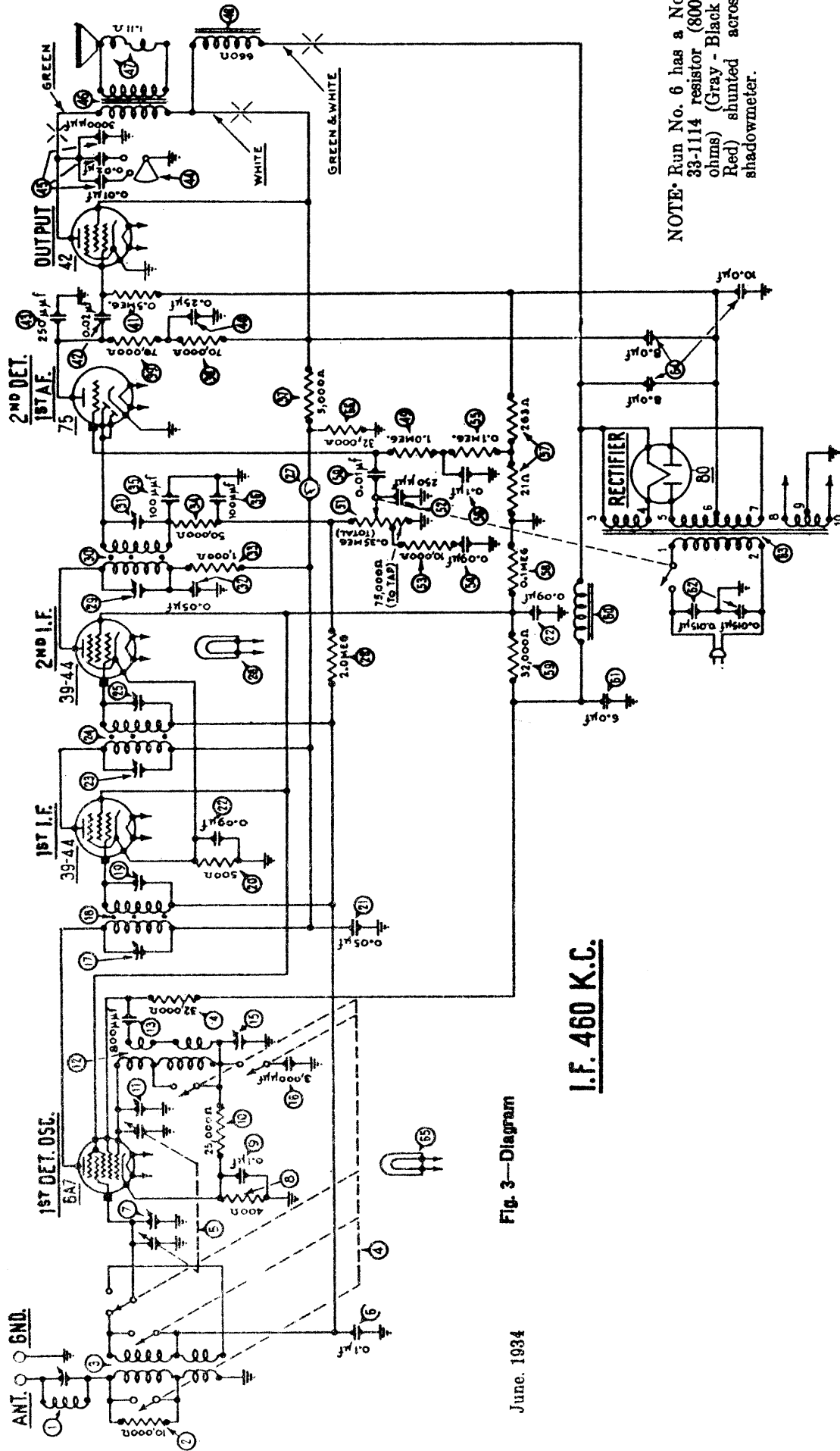
Fig. 4—Bottom View of Chassis Showing Parts.

REPLACEMENT PARTS — MODEL 28

No. on Diagram	Description	Part No.
1	Condenser (.00125 mfd.—Mica).....	5856
2	Wave Trap.....	38-6050
3	Resistor (10,000 ohms) (Brown-Black-Orange).....	33-1000
4	Antenna Transformer.....	32-1360
5	Wave Band Switch.....	42-1062
6	Condenser (.25 mfd.—Tubular).....	30-4146
7	Tuning Condenser Assembly.....	31-1366
8	Compensating Condenser (Antenna).....	Part of 7
9	Condenser (.1 mfd.—Tubular).....	30-4122
10	Resistor (400 ohms—Flex.) (Yellow-Black-Brown).....	33-3016
11	Condenser (.1 mfd.—Tubular).....	30-4122
12	Resistor (120,000 ohms) (Brown-Red-Yellow).....	33-1128
13	Condenser (.003 mfd.—Mica).....	30-1028
14	Compensating Condenser (Osc. H. F.).....	Part of 7
15	Oscillator Transformer.....	32-1361
16	Condenser (.0008 mfd.—Mica).....	5878
17	Resistor (10,000 ohms) (Brown-Black-Orange).....	3524
18	Compensating Condenser (Osc. L. F.).....	040005
19	Compensating Condenser (1st I. F. Primary).....	Part of 20
20	First I. F. Transformer.....	32-1362
21	Compensating Condenser (1st I. F. Secondary).....	Part of 20
22	Resistor (200 ohms—Flex.) (Red-Black-Black).....	7217
23	Condenser (.1 mfd.—Tubular).....	30-4122
24	Condenser (.09 mfd.—Twin-Bakelite Block).....	4989M
25	Resistor (15,000 ohms) (Brown-Green-Orange).....	6208
26	Resistor (.1 meg.) (White-White-Orange).....	4411
27	Compensating Condenser (2d I. F. Primary).....	Part of 28
28	2d I. F. Transformer.....	32-1363
29	Compensating Condenser (2d I. F. Secondary).....	Part of 28
30	Compensating Condenser (3d I. F. Primary).....	Part of 31
31	3d I. F. Transformer.....	32-1364
32	Compensating Condenser (3d I. F. Secondary).....	Part of 31
33	Condenser (.05 mfd.—Tubular).....	30-4020 35
34	Resistor (1000 ohms) (Brown-Black-Red).....	5837 25
35	Resistor (2 megs.) (Red-Black-Green).....	5872 25
36	Condenser (.0001 mfd.—Twin-Bakelite Block).....	8035E 25
37	Resistor (50,000 ohms) (Green-Brown-Orange).....	4518 25
38	Volume Control and On-Off Switch (350,000 ohms, tapped at 75,000).....	33-5066 1.45
39	Resistor (10,000 ohms) (Brown-Black-Orange).....	33-1000 25
40	Condenser (.05 mfd.—Bakelite Block).....	3615-BU 35
41	Condenser (.01 mfd.—Tubular).....	30-4124 25
42	Condenser (.00025 mfd.—Mica).....	5858 35

No. on Diagram	Description	Part No.
43	Resistor (1 meg.) (Brown-Black-Green).....	4409
44	Resistor (.5 meg.) (Yellow-White-Yellow).....	4517
45	Condenser (.1 mfd.—Tubular).....	30-4122
46	Condenser (.25 mfd.—Tubular).....	30-4146
47	Condenser (.00011 mfd.—Mica).....	30-1031
48	Condenser (.02 mfd.—Mica).....	30-4113
49	Resistor (.25 meg.) (Red-Yellow-Yellow).....	4410
50	Resistor (.5 meg.) (Yellow-White-Yellow).....	4517
51	Resistor (50,000 ohms) (Green-Brown-Orange).....	4518
52	Condenser (.09 mfd.—Twin-Bakelite Block).....	4989M
53	Resistor (25,000 ohms) (Red-Green-Orange).....	33-1013
54	Tone Control (3-point).....	30-4211
55	Condensers (In tone control).....	Inside 54
56	Output Transformer (28C).....	32-7243
57	Condenser (.25 mfd.—Tubular).....	30-4146
58	Voice Coil and Cone Assembly { P-21..... 02861 K-27..... 36-3159	
59	Field Coil and Pot Assembly { P-21..... 36-3357 K-27..... 36-3352	
60	Pilot Lamp.....	4567
61	Resistor (Wire Wound, New Type) (37, 63, 29 ohms).....	33-3159
62	Filter Choke.....	6658
63	Filter Choke.....	32-7018
64	Condenser (.05 mfd.—Tubular).....	30-4123
65	Condenser (Electrolytic 6 and 12 mfd., 150 volts).....	30-2083
66	Resistor (Wire Wound, New Type) (10, 137 ohms).....	33-3158
67	Condenser (.09 mfd.—Tubular).....	30-4122
68	Condenser (Electrolytic 6 and 12 mfd., 150 volts).....	30-2083
	Five-prong Socket.....	7546
	Six-prong Socket.....	7547
	Seven-prong Socket.....	27-8005
	Knob (large).....	27-4051
	Knob (small).....	27-4052
	Dial Assembly.....	31-1208
	Speaker Socket (Except 28C).....	4957
	A.C. Cord and Plug Assembly.....	L-943A
	Chassis Mounting Screw.....	W-1345
	Chassis Mounting Washer.....	29-2089
	Chassis Mounting Foot.....	27-4116
	Chassis Mounting Foot Plate.....	27-7497
	Back Cover (28-C only).....	29-2006
	Bottom Shield Plate.....	29-2005

MODEL 29

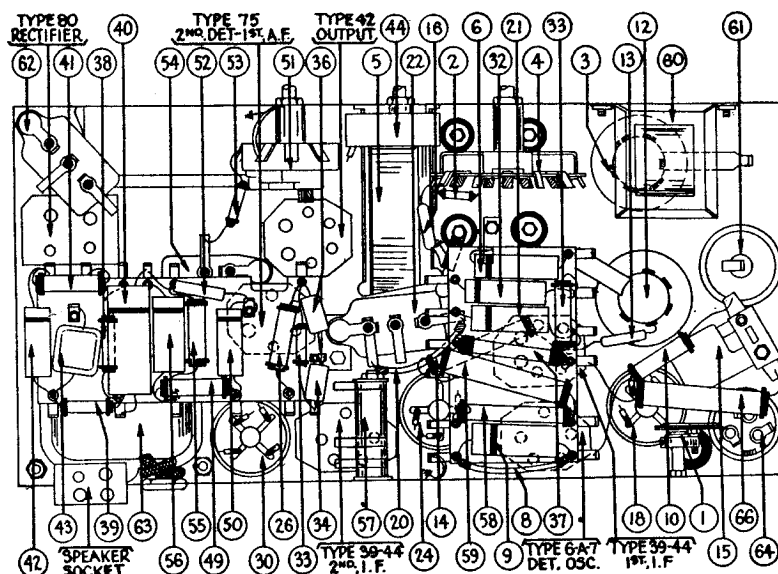


NOTE: Run No. 6 has a No. 33-1114 resistor (8000 ohms) (Gray - Black - Red) shunted across shadowmeter.

Fig. 3—Diagram

June, 1934

I.F. 460 K.C.



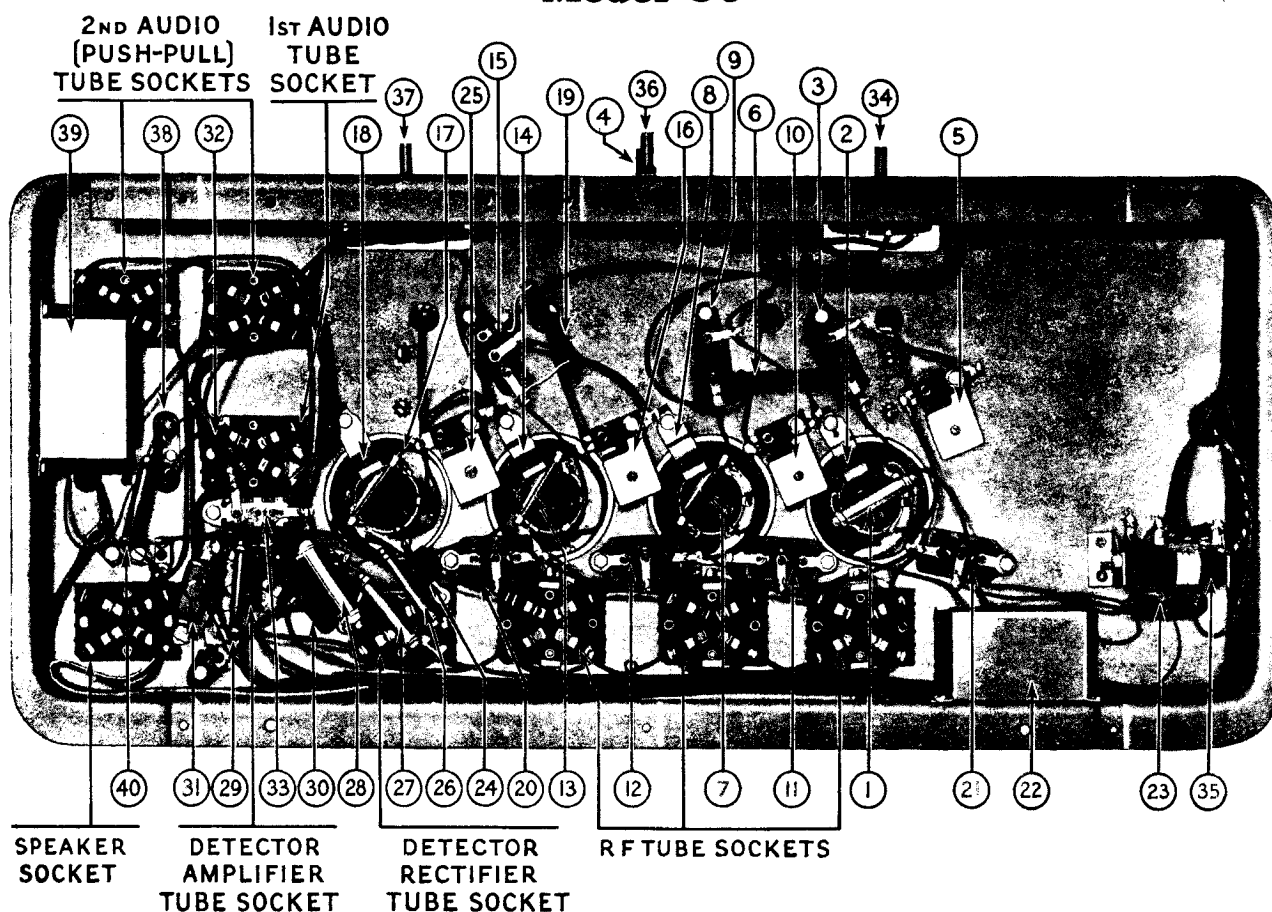
REPLACEMENT PARTS MODEL 29

Nos. on Diagram	Description	Part No.
1	Wave Trap.....	38-5190
2	Resistor (10,000 ohms) (Brown-Black-Orange).....	33-1000
3	Antenna Transformer.....	32-1360
4	Wave-Band Switch.....	42-1082
5	Tuning Condenser Assembly.....	*31-1192
6	Condenser (.1 Mfd. Tubular).....	30-4122
7	Compensating Condenser (Det.).....	Part of 5
8	Resistor (400 ohms Flexible Wire-Wound).....	33-3016
9	Condenser (.1 Mfd. Tubular).....	30-4122
10	Resistor (25,000 ohms) (Red-Green-Orange).....	4516
11	Compensating Condenser (Osc. H. F.).....	Part of 6
12	Oscillator Transformer.....	32-1361
13	Condenser (.0008 Mfd. Mica).....	5878
14	Resistor (32,000 ohms) (Orange-Red-Orange).....	3525
15	Compensating Condenser (Osc. L. F.).....	04000S
16	Condenser (.003 Mfd. Mica).....	7801
17	Compensating Condenser (1st I. F. Primary).....	Part of 18
18	First I. F. Transformer.....	32-1362
19	Compensating Condenser (1st I. F. Sec.).....	Part of 18
20	Resistor (500 ohms Flexible Wire-Wound).....	6977
21	Condenser (.05 Mfd. Tubular).....	30-4123
22	Condenser (.09 Mfd. Twin) (Bakelite Block).....	4989-Z
23	Compensating Condenser (2d I. F. Pri.).....	Part of 24
24	2d I. F. Transformer.....	32-1363
25	Compensating Condenser (2d I. F. Sec.).....	Part of 24
26	Resistor (2 Megohms) (Red-Black-Green).....	5872
27	Shadowmeter.....	6497
28	Pilot Lamp (Shadowmeter).....	Part of 27
29	Compensating Condenser (3d I. F. Pri.).....	Part of 30
30	3d I. F. Transformer.....	32-1364
31	Compensating Condenser (3d I. F. Sec.).....	Part of 30
32	Condenser (.05 Mfd. Tubular).....	30-4123
33	Resistor (1,000 ohms) (Brown-Black-Red).....	5837 .25
34	Resistor (50,000 ohms) (Green-Brown-Orange).....	6098 .25
35	Condenser (.0001 Mfd. Mica).....	30-1081
36	Condenser (.0001 Mfd. Mica).....	30-1031
37	Resistor (5,000 ohms) (Green-Black-Red).....	3526 .25
38	Resistor (70,000 ohms) (Violet-Black-Orange).....	5385 .25
39	Resistor (70,000 ohms) (Violet-Black-Orange).....	5895 .25

Nos. on Diagram	Description	Part No.
40	Condenser (.25 Mfd. Tubular).....	30-4124
41	Resistor (500,000 ohms) (Yellow-White-Yellow).....	4517
42	Condenser (.02 Mfd. Tubular).....	30-4113
43	Condenser (.00025 Mfd. Mica).....	5858
44	Tone Control.....	30-4178
45	Condensers (Inside 44).....	Part of 44
46	Output Transformer.....	32-7178
47	Voice Coil and Cone Assembly (H-16).....	02625
48	Field Coil and Pot. Assembly (H-16).....	36-3218
49	Resistor (1 Meg.) (Brown-Black-Green).....	4409
50	Condenser (.01 Mfd. Tubular).....	30-4124
51	Volume Control and On-Off Switch.....	33-5066
52	Condenser (.00025 Mfd. Mica).....	5858
53	Resistor (10,000 ohms) (Brown-Black-Orange).....	33-1000
54	Condenser (.09 Mfd.) (Bakelite Block).....	4989-AM
55	Resistor (100,000 ohms) (White-White-Orange).....	4411
56	Condenser (.1 Mfd. Tubular).....	30-4122
57	B. C. Resistor (263 ohms; 23 ohms; Wire-Wound).....	33-3069
58	Resistor (.1 Meg.) (White-White-Orange).....	3767
59	Resistor (32,000 ohms) (Orange-Red-Orange).....	33-1026
60	Filter Choke.....	32-7018
61	Condenser (Electrolytic—6 Mfd.).....	30-2020
62	Condenser (.015 Mfd. Twin—Bakelite Case).....	3793-E
63	Power Transformer.....	32-7229
64	Condenser (Electrolytic—8 Mfd., 8 Mfd., 10 Mfd.).....	30-2073
65	Pilot Lamp (Dial).....	6608
66	Resistor (32,000 ohms) (Orange-Red-Orange).....	33-1026
	A. C. Cord and Plug Assembly.....	1-943-A
	Tube Shield.....	28-1107
	Four-Prong Socket.....	7544
	Fire-Prong Socket.....	7547
	Six-Prong Socket.....	7546
	Seven-Prong Socket.....	27-6006
	Speaker Socket.....	4057
	Knob (Large).....	27-4051
	Knob (Small).....	27-4052
	Dial Assembly.....	*31-1208
	Dial Scale.....	27-5042
	Chassis Mounting Screw.....	W-1345A
	Chassis Mounting Foot (Steel).....	29-1983
	Chassis Mounting Foot (Rubber).....	27-4116
	Chassis Mounting Foot Plate.....	27-7497
	Screw (Foot mtg.).....	W-644A

*Note: Some Model 29 sets use tuning condenser assembly No. 31-1250, which has dial assembly 31-1245. This is not interchangeable with 31-1192 and 31-1208.

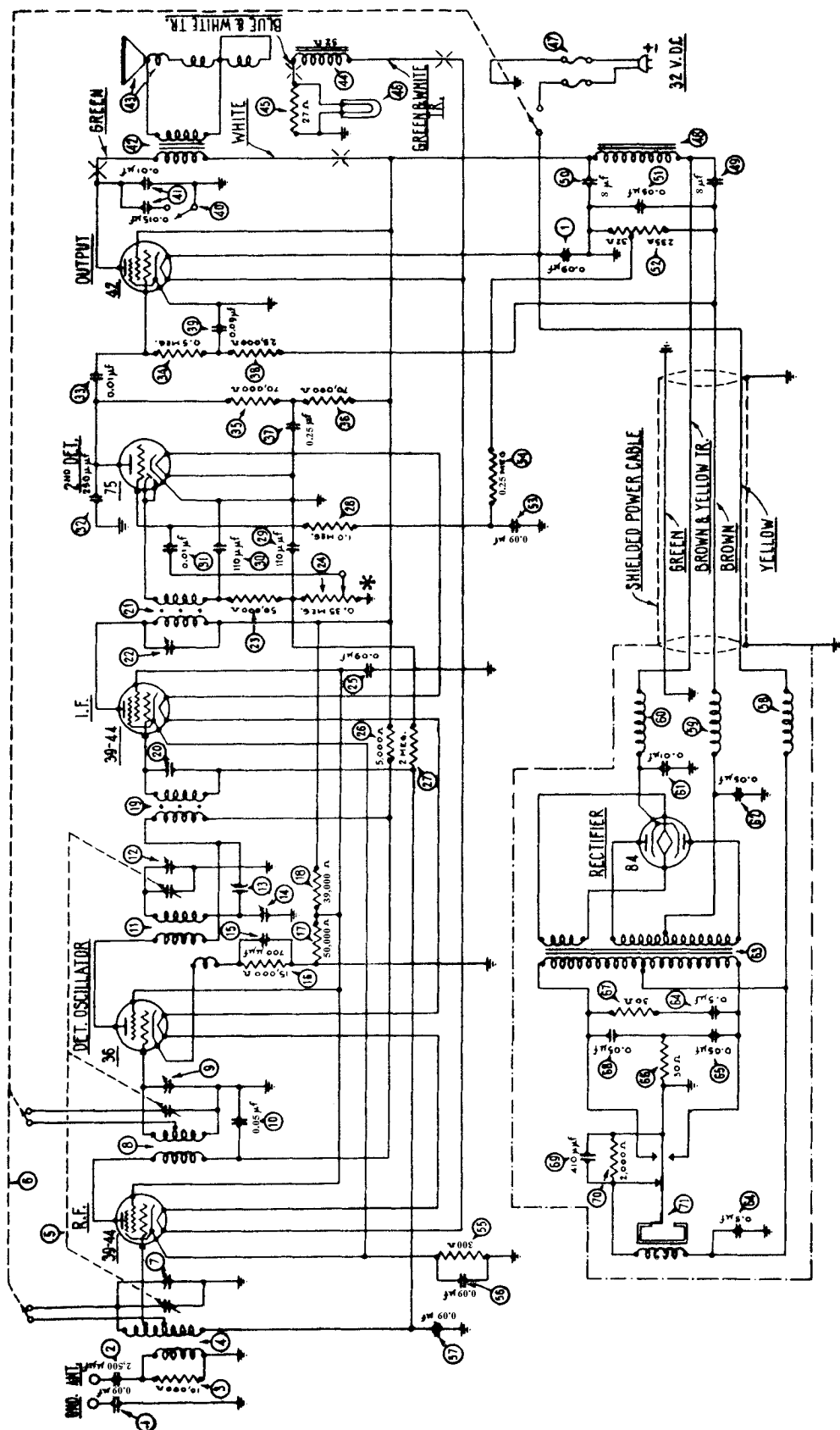
Model 30



REPLACEMENT PARTS LIST

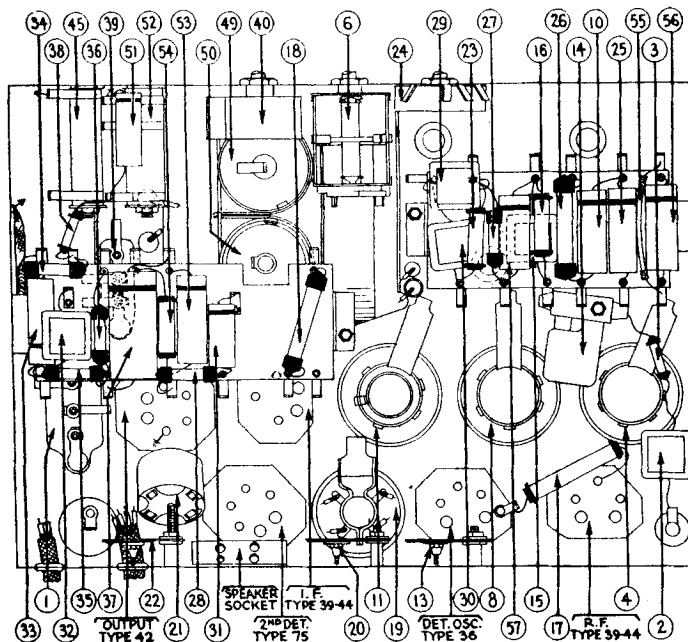
No. on Figs. 1 and 2	Description	Part No.	No. on Figs. 1 and 2	Description	Part No.
①	Resistor (5000)	3526	②⑦	Resistor (100,000)	3767
②	Antenna Coil	4182-A	②⑧	Resistor (250,000)	3768
③	By-Pass Condenser (.05)	3615-E	②⑨	Resistor (500,000)	3769
④	Tuning Condenser	4000-G	③①	By-Pass Condenser (.000250)	3082
⑤	Compensating Condenser	3968-A	③②	By-Pass Condenser (.000250)	3082
⑥	Resistor (70,000)	3542	③③	Resistor (500,000)	3769
⑦	Coupling Condenser	3892-A	③④	By-Pass Condenser (.01)	3903-F
⑧	Coil—2d R. F.	4182-B	③⑤	Volume Control	4093
⑨	By-Pass (.05)	3615-E	③⑥	Resistor	3864
⑩	Compensating Condenser	3968-A	③⑦	On-Off Switch	4095
⑪	By-Pass Condenser (.05) and Resistor	3615-B	③⑧	Tone Control	4037-A
⑫	By-Pass Condenser (.05) and Resistor	3615-C	③⑨	Audio Transformer	3242
⑬	Coupling Condenser	3892-A	④①	By-Pass Condenser (Single .25)	4264
⑭	Coil—3d R. F.	4182-B	④②	Resistor (25,000)	3656
⑮	By-Pass Condenser (.05)	3615-F	④③	Speaker Motor	2761
⑯	Compensating Condenser	3968-A	④④	Cone Assembly	2764-A
⑰	Coupling Condenser	3892-A	④⑤	Speaker Cord and Plug	L-1127-A
⑱	Coil—4th R. F.	4182-B	④⑥	Knob (Large)	3580-A
⑲	Resistor (500,000)	3769	④⑦	Knob (Small)	3579-A
⑳	By-Pass Condenser (.05) and Resistor	3615-C	④⑧	Spring (For 3579 and 3580)	3305
㉑	By-Pass Condenser (.05) and Resistor	3615-B	④⑨	Knob (Switch)	4146-A
㉒	By-Pass Condenser (Double .25)	3557	④⑩	Spring (For 4146)	4147
㉓	Filter Choke	3518	④⑪	Tuning Scale	4139
㉔	Condenser (.00005)	3774	④⑫	Grid Clip	4060-A
㉕	Compensating Condenser	3772-A	④⑬	"A" Battery (2-volt) "Philco Drydynamic 92-R"	
㉖	Resistor (100,000)	3767	④⑭	Tube Socket (32 type tube) Assembly	3977-C
			④⑮	Tube Socket	3977-A
			④⑯	Speaker Socket	3977-B

MODEL 32 (32 Volts — D.C.)

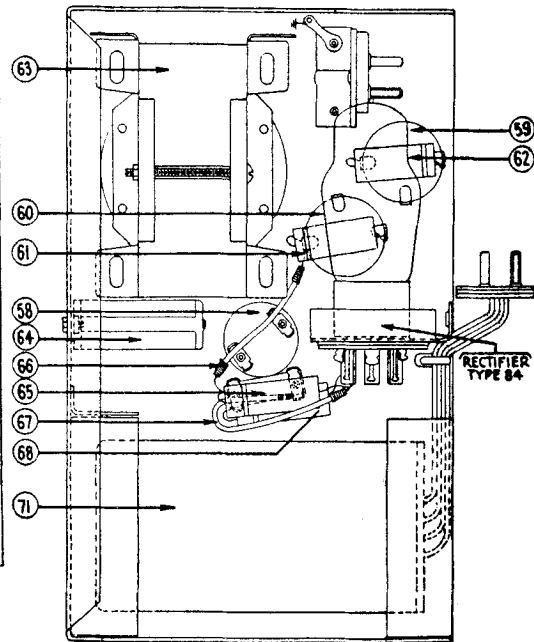


* MUST BE GROUNDED AT 75 CATHODE

MODEL 32



Bottom View of Chassis



Bottom of Vibrator and Rectifier Unit

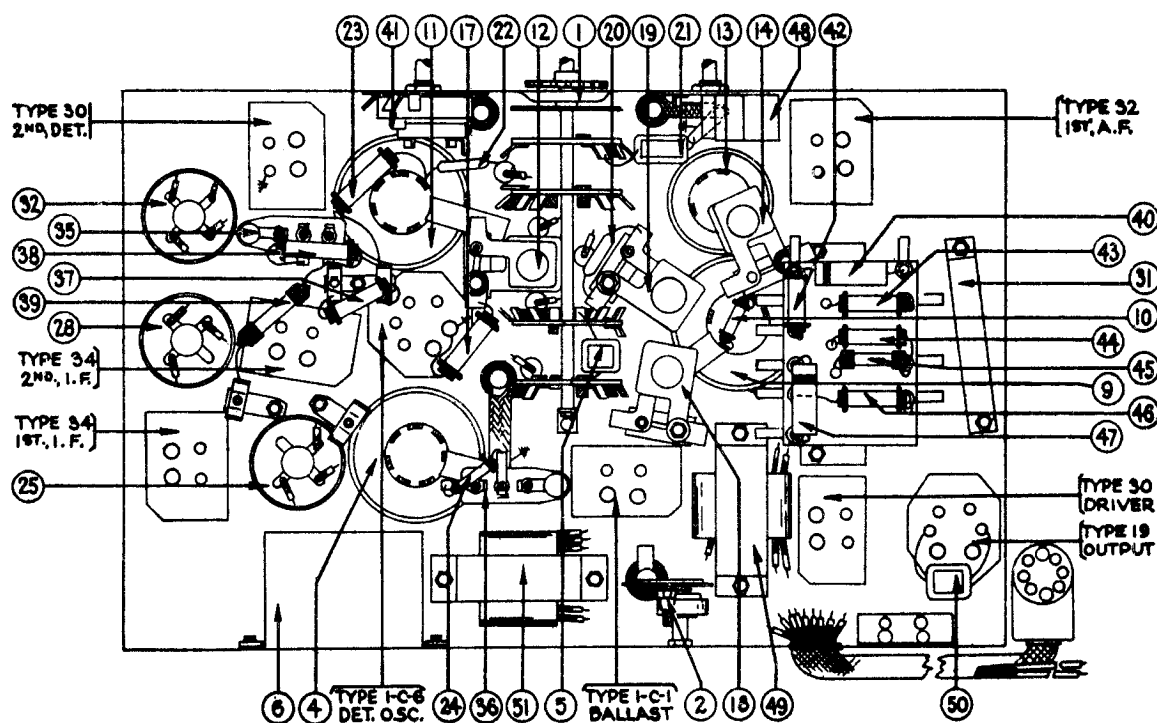
REPLACEMENT PARTS FOR MODEL 32

Description	Part No.	Description	Part No.
1 Condenser (.09 mfd.—.09 mfd.)	4989-G	36 Resistor (70,000 ohms) (Violet-Black-Orange)	5385
2 Condenser (.0025 mfd.) (mica)	7006	37 Condenser (.25 mfd. tubular)	30-4134
3 Resistor (10,000 ohms—Brown-Black-Orange)	33-1000	38 Resistor (25,000 ohms) (Red-Green-Orange)	33-1013
4 Antenna Transformer	32-1062	39 Condenser (.09 mfd.) (Bakelite block type)	4989-AL
5 Tuning Condenser Assembly	31-1059	40 Tone Control	06764
6 Wave-band & On-off Switch	42-1017	41 Condensers	Part of 4
7 Compensating Condenser (ant.)	Part of 5	42 Output Transformer (For K-26 spkr.)	32-7042
8 Detector Transformer	32-1063	43 Voice Coil and Cone (For K-26 spkr.)	36-3174
9 Compensating Condenser (det.)	Part of 5	44 Field Coil and Pot Assembly (K-26)	36-3306
10 Condenser (.05 mfd. tubular)	30-4123	45 Resistor (Pilot light) (27 ohms)	33-3132
11 Oscillator Transformer	06620	46 Pilot Lamp	4567
12 Compensating Condenser (osc. H. F.)	Part of 5	47 Line Fuses (Located in line plug) (3 amp.)	45-2046
13 Compensating Condenser (1st I. F. pri.)	04000-M	48 Filter Choke	32-7213
14 Compensating Condenser (osc. L. F.)	04000-S	49 Condenser (Electrolytic—8 mfd. wet)	30-2026
15 Condenser (.0007 mfd.—mica)	5863	50 Condenser (Electrolytic—8 mfd. dry)	30-2014
16 Resistor (15,000 ohms) (Brown-Green-Orange)	6208	51 Condenser (.05 mfd. tubular)	30-4020
17 Resistor (50,000 ohms) (Green-Brown-Orange)	4518	52 B. C. Resistor (235—32 ohms)	7998
18 Resistor (39,000 ohms) (Orange-White-Orange)	33-1027	53 Condenser (.09 mfd. tubular)	30-4122
19 First I. F. Transformer	32-1289	54 Resistor (.25 meg.) (Red-Yellow-Yellow)	4410
20 Compensating Condenser (1st I. F. secondary)	04000-M	55 Resistor (Flexible—300 ohms)	33-3010
21 Second I. F. Transformer	06622	56 Condenser (.09 mfd. tubular)	30-4122
22 Compensating Condenser (2d I. F. primary)	04000-A	57 Condenser (.09 mfd. tubular)	30-4122
23 Resistor (50,000 ohms) (Green-Brown-Orange)	4518	58 Speaker Plug Socket	4957
24 Volume Control (350,000 ohms)	33-5065	59 Line Plug Assembly with Cord (Less fuses)	L-1738
25 Condenser (.09 mfd. tubular)	30-4122		
26 Resistor (5,000 ohms) (Green-Black-Red)	3526		
27 Resistor (2 meg. Red-Black-Green)	5872		
28 Resistor (1 meg. Brown-Black-Green)	4409		
29 Condenser (.00011 mfd.—mica)	30-1006		
30 Condenser (.00011 mfd.—mica)	30-1006		
31 Condenser (.01 mfd. tubular)	30-4124		
32 Condenser (.00025 mfd.—mica)	3082		
33 Condenser (.01 mfd. tubular)	30-4145		
34 Resistor (.5 meg.) (Yellow-White-Yellow)	4517		
35 Resistor (70,000 ohms) (Violet-Black-Orange)	5385		

VIBRATOR AND RECTIFIER UNIT

58 R. F. Choke (Low voltage)	32-1375
59 R. F. Choke (High voltage)	32-1348
60 R. F. Choke (High voltage)	32-1348
61 Condenser (.01 mfd. tubular)	30-4145
62 Condenser (.05 mfd. tubular)	30-4020
63 Power Transformer	32-7218
64 Condenser (.5 mfd.—.5 mfd.—metal case)	30-4155
65 Condenser (.05 mfd. tubular)	30-4020
66 Resistor (30 ohms flexible wire wound)	33-3119
67 Resistor (30 ohms flexible wire wound)	33-3119
68 Condenser (.05 mfd. tubular)	30-4020
69 Condenser (.00041 mfd.—mica)	Inside 71
70 Resistor (2,000 ohms)	Inside 71
71 Vibrator Unit	38-5640

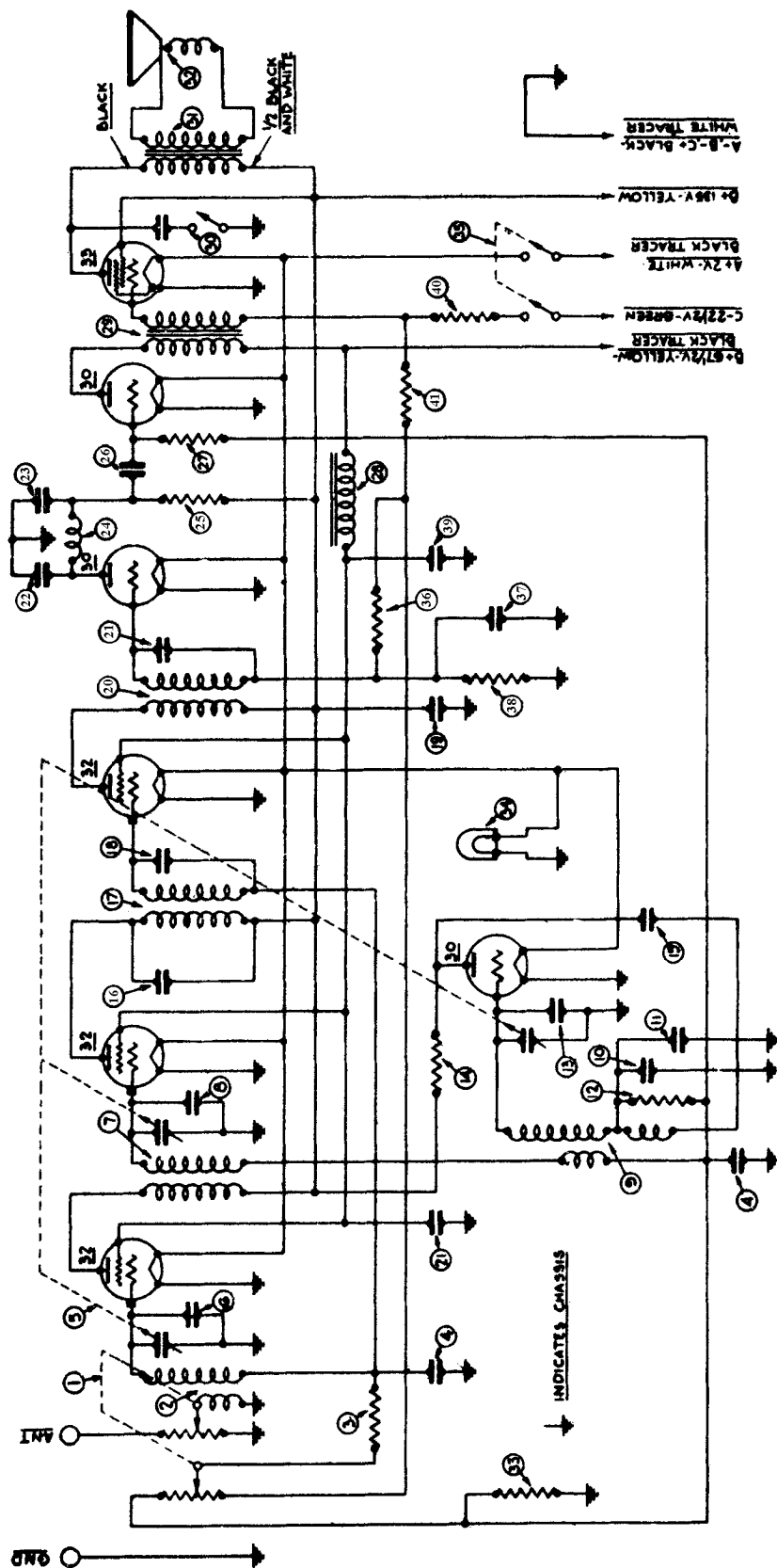
MODEL 34



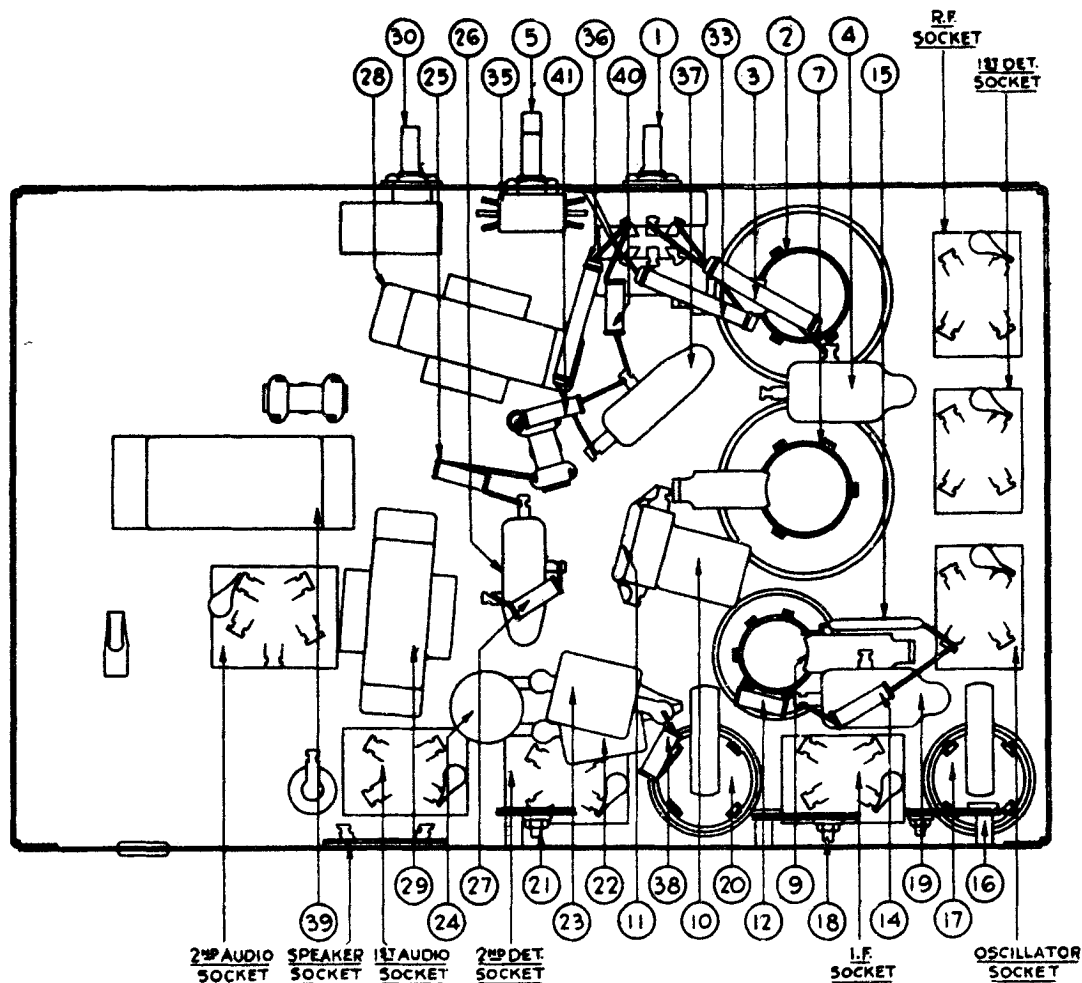
MODEL 34 PARTS

No. on Figs.	Description	Part No.	No. on Figs.	Description	Part No.
1	Wave-Band Switch.....	42-1045	35	Condenser (.00011 mfd. twin).....	8035-C
2	Wave Trap.....	38-5199	36	Condenser (.05 mfd.).....	3615-J
3	Tuning Condenser Assembly.....	31-1153	37	Resistor (1,000 ohms—Brown-Black-Red).....	5837
4	Antenna Transformer (H. F. Bands).....	32-1271	38	Resistor (50,000 ohms—Green-Brown-Orange).....	4518
5	Condenser (.00025 mfd.).....	3082	39	Resistor (2 meg.—Red-Black-Green).....	5872
6	By-pass Condenser Block (.25-.5-.05-.05 mfd.).....	30-4151	40	Condenser (.01 mfd.).....	30-4124
7	Compensating Condenser (Ant. H. F.).....	Part of 3	41	Volume Control and On-Off Switch.....	33-5064
8	Compensating Condenser (Ant. B'ost).....	Part of 3	42	Resistor (1.0 meg.—Brown-Black-Green).....	4409
9	Antenna Transformer (Broadcast).....	32-1270	43	Resistor (330,000 ohms—Orange-Orange-Yellow).....	4410
10	Resistor (10,000 ohms—Brown-Black-Orange).....	33-1000	44	Resistor (.25 meg.—Red-Yellow-Yellow).....	6046
11	Oscillator Transformer (H. F. Bands).....	32-1273	45	Resistor (70,000 ohms—Violet-Black-Orange).....	5385
12	Compensating Condenser (Range 2).....	04000-C	46	Resistor (.5 meg.—Yellow-White-Yellow).....	4517
13	Oscillator Transformer (Broadcast).....	32-1272	47	Condenser (.01 mfd.).....	30-4124
14	Compensating Condenser (Osc. Range 1).....	04000-A	48	Tone Control.....	30-4152
15	Compensating Condenser (Osc. Range 4).....	Part of 3	49	Audio (Input) Transformer.....	7283
16	Compensating Condenser (Osc. Range 3).....	Part of 3	50	Condenser (.003 mfd.).....	7301
17	Resistor (50,000 ohms—Green-Brown-Orange).....	4518	51	Output Transformer.....	32-7223
18	Compensating Condenser (Broadcast; Series).....	04000-S	52	Voice Coil & Cone Assembly (KR-6).....	36-5157
19	Compensating Condenser (Range 2; Series).....	04000-R	53	Pilot Lamp.....	5316
20	Condenser (.0007 mfd.).....	5863	54	Condenser (.01 mfd.).....	Part of 48
21	Condenser (.003 mfd.).....	6009		Pilot Lamp Bracket.....	38-5633
22	Condenser (.0008 mfd.).....	6021		Battery Cable.....	41-3083
23	Resistor (5,000 ohms—Green-Black-Red).....	5310		Tube Shield (1).....	28-1107
24	Resistor (100,000 ohms—White-White-Orange).....	6099		Tube Shield (2).....	8005
25	First I. F. Transformer.....	32-1341		Six Prong Socket.....	7547
26	Compensating Condenser (1st I. F. Pri.).....	31-6007, Inc. as part of 25		Four Prong Socket.....	7544
27	Compensating Condenser (1st I. F. Sec.).....	part of 25		Speaker Socket.....	4957
28	Second I. F. Transformer.....	32-1341		Knob (Medium).....	03063
29	Compensating Condenser (2nd I. F. Pri.).....	31-6007, Inc. as part of 28		Knob (Small).....	03064
30	Compensating Condenser (2nd I. F. Sec.).....	part of 28		Knob (Large).....	27-4025
31	Condenser (.25-.25 mfd.) (By-pass).....	30-4150		Dial Assembly.....	31-1162
32	3rd I. F. Transformer.....	32-1342		Dial Scale.....	27-5039
33	Compensating Condenser (3rd I. F. Pri.).....	31-6007, Inc. as part of 32		Dial Scale.....	31-1056
34	Compensating Condenser (3rd I. F. Sec.).....	part of 32		Idle Shaft Assembly.....	28-7012
				Gear (Wave-Band Switch).....	W-567
				Mounting Bolt.....	5189
				Mounting Washer (Rubber).....	5189
				Mounting Washer (Steel).....	5053

MODELS 35 & 36



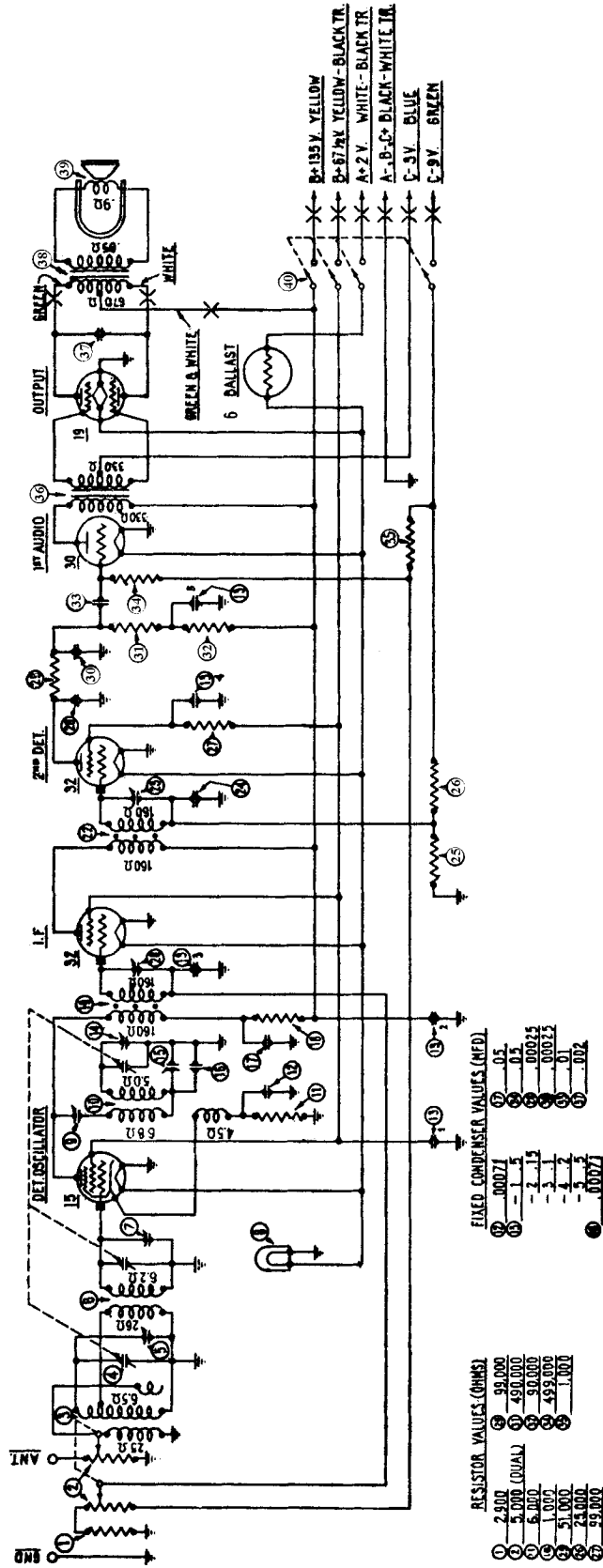
MODELS 35 & 36 —



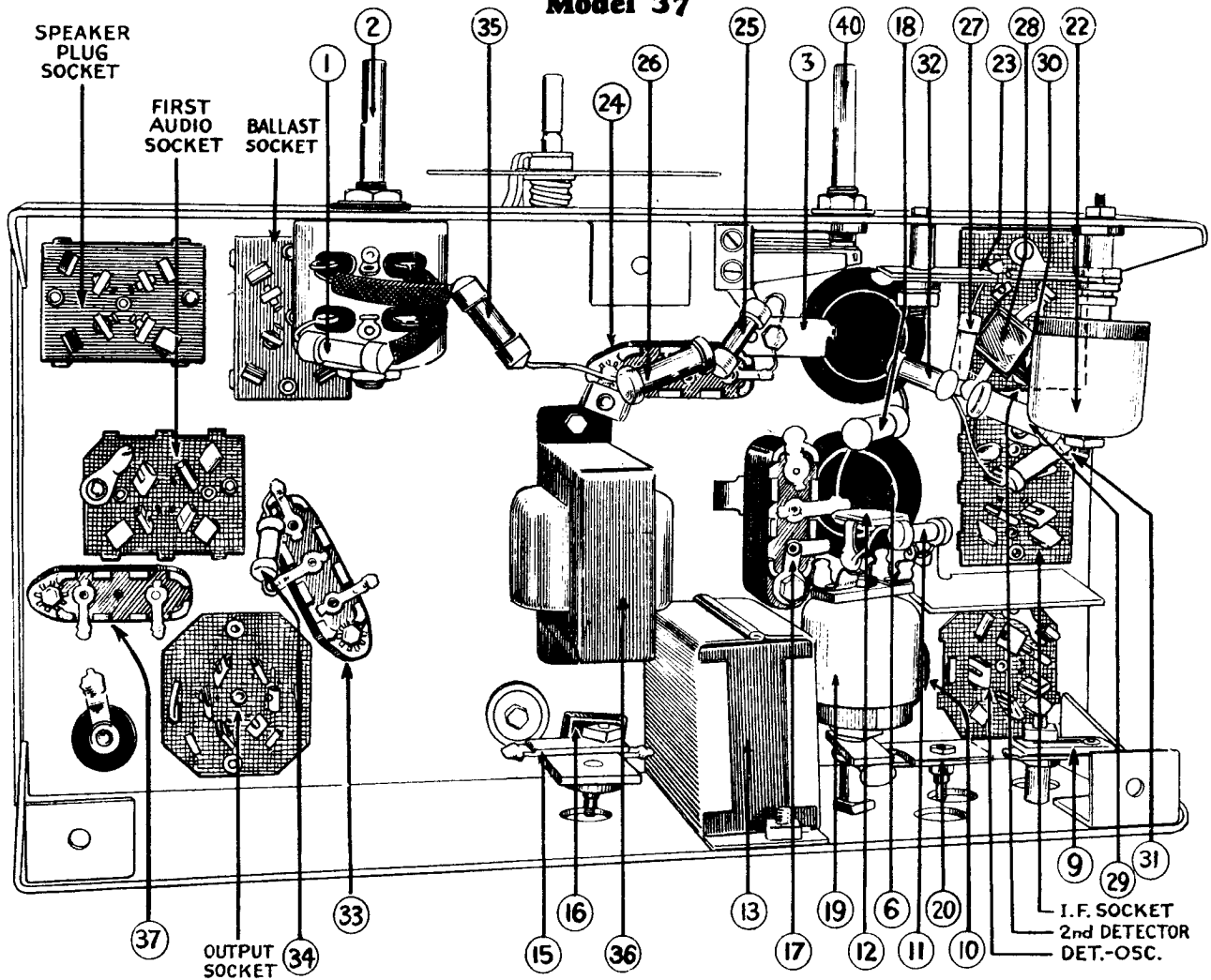
REPLACEMENT PARTS LIST

	Part No.		Part No.
① Volume Control	5317	②④ Detector R. F. Choke	03086
② Antenna Coil	03320	② Resistor (240,000 Ohms)	4410
③ Resistor (240,000 Ohms)	3768	② Condenser (.01 mfd.)	3903-J
④ By-pass Condenser (.09 mfd.)	4989-B	② Resistor (490,000 Ohms)	4517
⑤ Tuning Condenser	03076	② Choke	5314
⑥ Compensating Condenser (part of tuning condenser assembly)		② Input Transformer	5315
⑦ First Detector Transformer	03083	② Tone Control	03140
⑧ Compensating Condenser (part of tuning condenser assembly)		② Output Transformer	2646
⑨ Oscillator Coil	03321	② Voice Coil and Cone	02949
⑩ Compensating Condenser, { Assembled 03249		② Resistor (3000 Ohms)	5309
⑪ Condenser (410 mmf.)		② Pilot Lamp	5316
⑫ Resistor (51,000 Ohms)	4518	② Switch	5318
⑬ Compensating Condenser (part of tuning condenser assembly)		② Resistor (32,000 Ohms)	3525
⑭ Resistor (51,000 Ohms)	4518	② Condenser (.09 mfd.)	4989-F
⑮ Condenser (110 mmf.)	4519	② Resistor (99,000 Ohms)	4411
⑯ Compensating Condenser, Assembled	03411	② Condenser (2 mfd.)	03298
⑰ First I. F. Transformer	03009	② Resistor (5,000 Ohms)	5310
⑱ Compensating Condenser, Assembled	03411	② Resistor (10,000 Ohms)	4412
⑲ Condenser (.09 mfd.)	4989-B	② Knob (Large)	03063
⑳ Second I. F. Transformer	03092	② Knob (Small)	03064
㉑ Compensating Condenser, Assembled	03411	② Spring (For Switch Knobs)	4147
㉒ Condenser (.002 mfd.)	4059	② Spring (For Dial Knobs)	5262
㉓ Condenser (.002 mfd.)	4059	② Tube Shield	03306
		② Grid Clip	4897
		② Grommet (R. F. Transformer Shield)	3747
		② Four Prong Socket Assembly	4955
		② Five Prong Socket Assembly	4956
		② Volume Control Insulator	4092
		② Volume Control Insulator	4286
		② Dial Assembly Complete	03031
		② Bezel	5009
		② Pilot Bracket Complete	03011
		② Light Shield Screen	4937

Model 37



Model 37

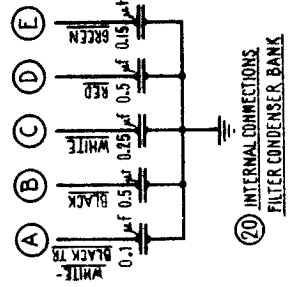
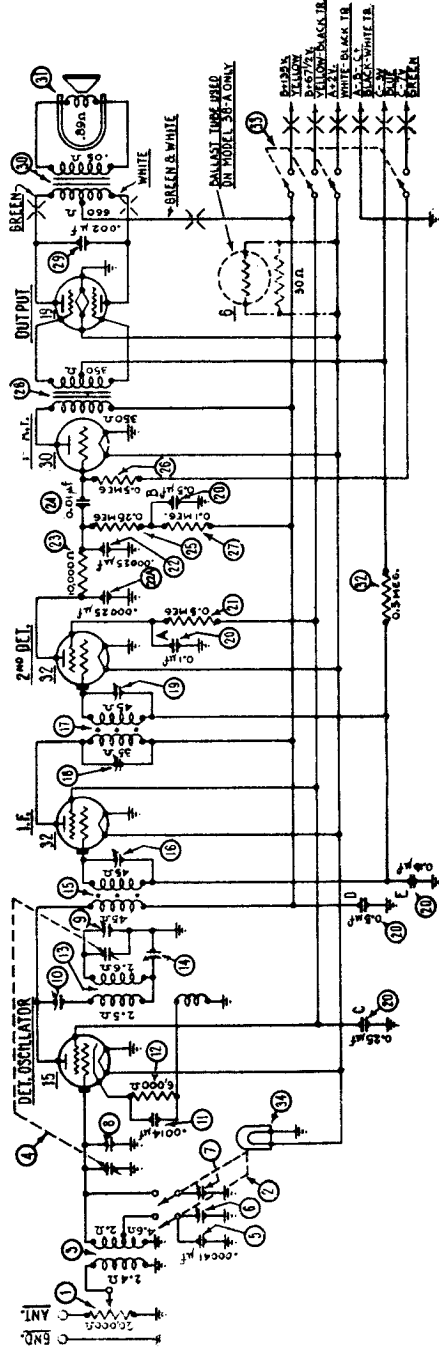


Replacement Parts for Model 37

	Part No.
① Resistor (2,900 Ohms)	5309
② Volume Control	7239
③ Antenna Transformer	05726
④ Tuning Condenser Assembly	05740
⑤ Compensating Cond.—Antenna— Part of Tuning Cond. Assembly	
⑥ Detector Transformer	05727
⑦ Compensating Cond. — Detec- tor—Part of Tuning Cond. Assembly	
⑧ Pilot Light	5316
⑨ Comp. Cond.—1st. I.F. Primary	04000-A
⑩ Oscillator Coil	05728
⑪ Resistor (6,000 Ohms)	7352
⑫ Cond. 710 Mmf. White and Yel- low	5863
⑬ Filter Cond. Bank (.1, .15, .25, 2-.5 Mfd.)	03915
⑭ Comp. Cond.—High Frequency —Part of Tuning Cond. As- sembly	
⑮ Comp. Cond.—Low Frequency	04000-F
⑯ Cond. 710 Mmf. White and Yel- low	5863
⑰ Condenser (.05 Mfd.)	3615-AC
⑱ Resistor (1,000 Ohms)	5837
⑲ First I.F. Transformer	05697
⑳ Comp. Condenser — 1st. I.F. Secondary	04000-A

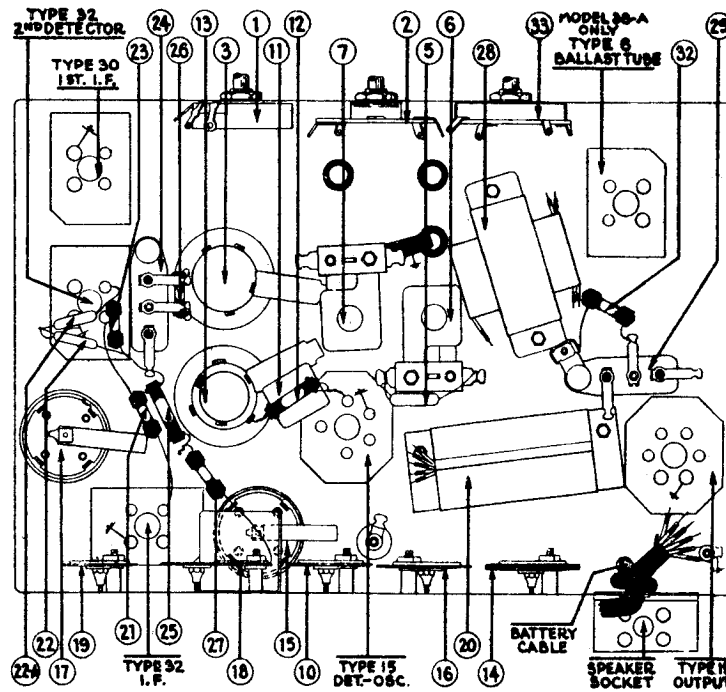
	Part No.
㉑ Second I.F. Transformer	05698
㉒ Comp. Cond. 2nd. I.F. Secondary	04000-A
㉓ Cond. .05 Mfd.	3615-AU
㉔ Resistor (51,000 Ohms)	4518
㉕ Resistor (25,000 Ohms)	4516
㉖ Resistor (99,000 Ohms)	4411
㉗ Condenser 250 Mmf. Yellow	3082
㉘ Resistor (99,000 Ohms)	4411
㉙ Condenser 250 Mmf. Yellow	3082
㉚ Resistor (490,000 Ohms)	4517
㉛ Resistor (99,000 Ohms)	4411
㉜ Condenser (.01 Mfd.)	3903-X
㉝ Resistor (490,000 Ohms)	4517
㉞ Resistor (1,000 Ohms)	5837
㉟ Input Transformer	7233
㊱ Condenser (2,000 Mmf.)	7296-B
㊲ Output Transformer	2646
㊳ Voice Coil and Cone Assembly	02887
㊴ Battery Switch	7283
㊵ Tube Shield	05720
㊶ Knob	03064
㊷ Knob Spring	4147
㊸ Four Prong Socket	5026
㊹ Five Prong Socket	4956
㊺ Six Prong Socket	6417
㊻ Dial Complete	05811
㊼ Bezel	6413

MODELS 38 & 38A



I. F. 460 K. C.

MODELS 38 & 38A



REPLACEMENT PARTS FOR MODELS 38 AND 38-A

No. on Figs.	Description	Part No.	No. on Figs.	Description	Part No.
①	Volume Control.....	33-5617	②4	Condenser (.01).....	3903-Z
②	Wave-Band Switch.....	42-1039	②5	Resistor (.25 meg.) (Red-Yellow-Yellow).....	4410
③	Antenna Transformer.....	32-1208	②6	Resistor (.5 meg.) (Yellow-White-Yellow).....	4517
④	Tuning Condenser Assembly.....	31-1076	②7	Resistor (.1 meg.) (White-White-Orange).....	4411
⑤	Condenser (.00041).....	30-1000	②8	Input Transformer.....	7233
⑥	Compensating Condenser (Ant.; L.F.; Police).....	04000-S	②9	Condenser (.002).....	7296-C
⑦	Compensating Condenser (Ant.; H.F.; Police).....	04000-X	③0	Output Transformer.....	2505
⑧	Compensating Condenser (Ant.; H.F.; Part of ⑥).....		③1	Voice Coil and Cone Assembly (KR-2).....	36-3014
⑨	Compensating Condenser (Osc.; H.F.; Part of ⑥).....		③2	Resistor (.5 meg.) (Yellow-White-Yellow).....	4517
⑩	Compensating Condenser (1st. I.F. Primary).....	04000-A	③3	Switch ("On-Off"; Battery).....	42-1040
⑪	Condenser (.0014).....	7007	③4	Pilot Lam. (Station Selector).....	5316
⑫	Resistor (6,000) (Blue-Black-Red).....	7352		Resistor (∞ ohm) [(Used across Type 6 ballast tube filament; Model 38-A, only)].....	7155
⑬	Oscillator Transformer.....	32-1209		Shorting Jumper (Model 38; across filament terminals; Type 6 tube socket).....	28-8061
⑭	Compensating Condenser (Osc.; L.F.).....	04000-S		Tube Shield.....	28-1107
⑮	1st. I.F. Transformer.....	32-1251		Four-prong Tube Socket.....	7545
⑯	Compensating Condenser (1st. I.F. Secondary).....	04000-A		Five-prong Tube Socket.....	7546
⑰	2nd. I.F. Transformer.....	32-1252		Six-prong Tube Socket.....	7547
⑱	Compensating Condenser (2nd. I.F. Primary).....	04000-A		Speaker Socket.....	4957
⑲	Compensating Condenser (2nd. I.F. Secondary).....	04000-A		Battery Cable Assembly (including multi-plug).....	38-5265
⑳	Filter Condenser Bank.....	03915		Station Selector Dial-scale.....	27-5019
㉑	Resistor (.5 meg.) (Yellow-White-Yellow).....	4517		Knob (large).....	03063
㉒	Condenser (.00025).....	3082		Knob (small).....	03064
㉒A	Condenser (.00025).....	3082			
㉓	Resistor (10,000) (Brown-Black-Orange).....	4412			

[illegible]

INTERNAL CONNECTIONS
FILTER CONDENSER BANK

(22)

WHITE-
BLACK TR

(A) $0.1 \mu\text{f}$

BLACK

(B) $0.5 \mu\text{f}$

WHITE

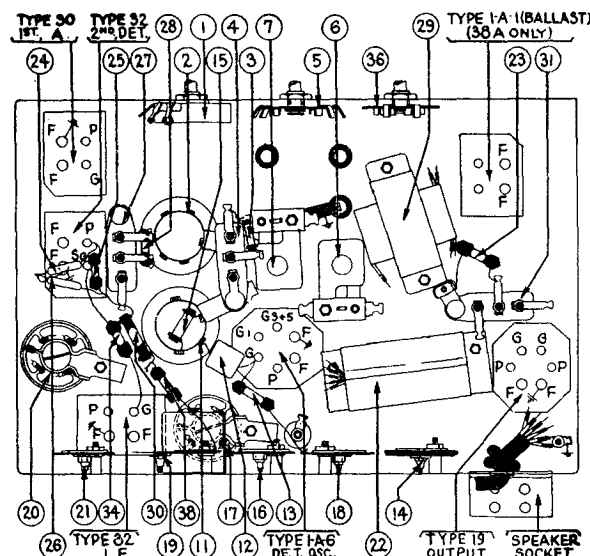
(C) $0.25 \mu\text{f}$

FED

(D) $0.5 \mu\text{f}$

BROWN

(E) $0.15 \mu\text{f}$

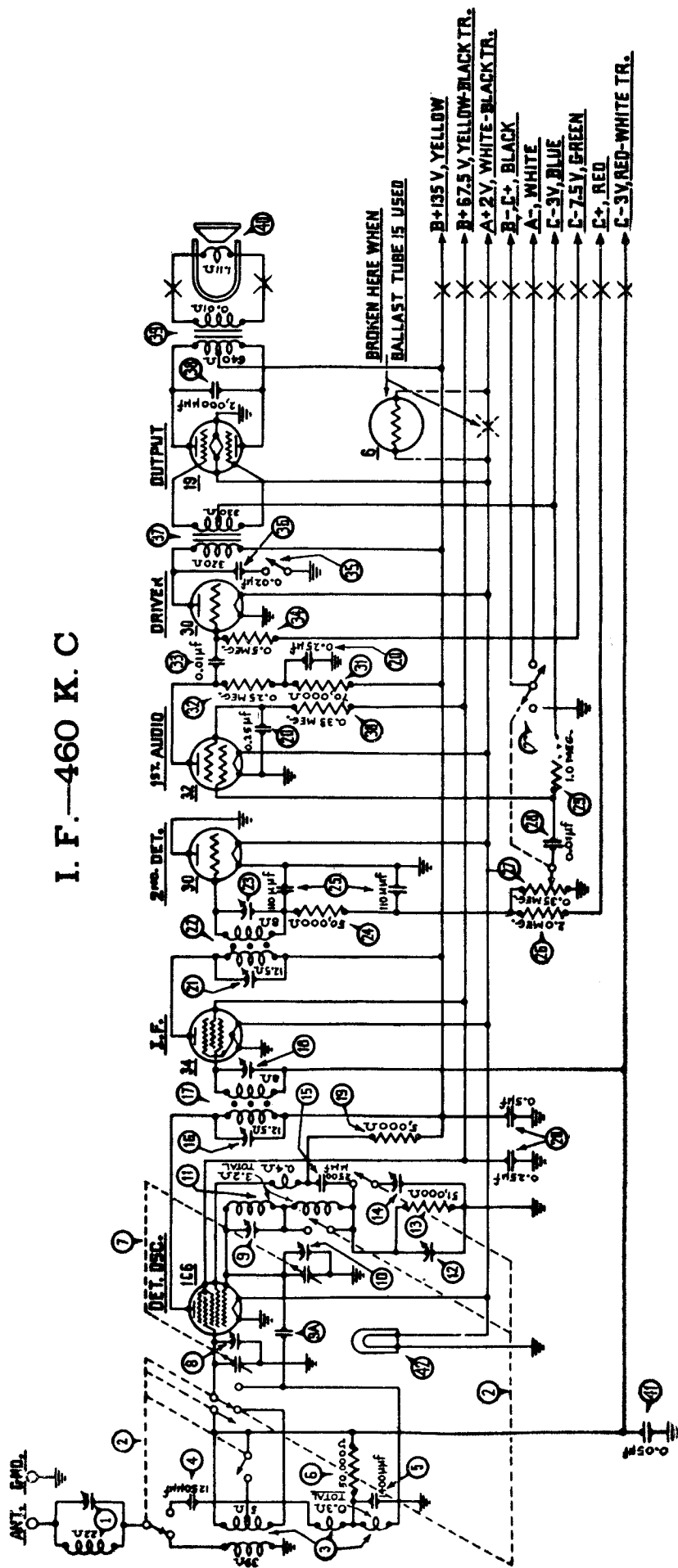


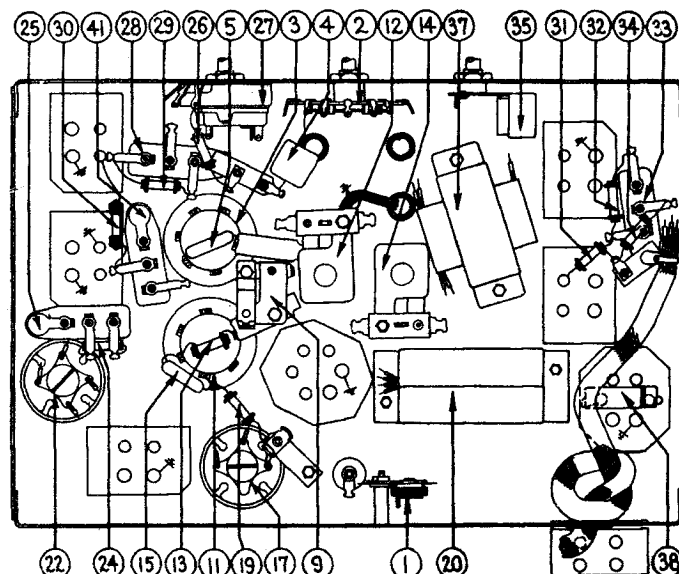
Replacement Parts—Model 38 (Code 123)

	Part No.		Part No.
① Volume Control.....	33-5017	②⑦ Condenser (.01 mfd. Bakelite Block).....	3903-Z
② Antenna Transformer.....	32-1518	②⑧ Resistor (.5 meg.) (Yellow-White-Yellow).....	6097
③ Resistor (.1 meg.) (White-White-Yellow).....	6099	②⑨ Audio Transformer.....	7233
④ Condenser (.09 mfd. Bakelite Block).....	4989-F	③⑩ Resistor (.25 meg.) (Red-Yellow-Yellow).....	4410
⑤ Wave-band Switch.....	42-1039	③① Condenser (.002 mfd. mica).....	7296-C
⑥ Compensating Condenser (Ant. L. F.-Police)...	04000-S	③② Output Transformer.....	32-7286
⑦ Compensating Condenser (Ant. H. F.-Police)...	04000-D	③③ Voice Coil & Cone Assembly (KR-7).....	36-3159
⑧ Tuning Condenser Assembly.....	31-1401	③④ Resistor (10000 ohms) (Brown-Black-Orange)...	33-1000
⑨ Compensating Condenser (Ant. H. F.).....	Part of ⑧	③⑤ Pilot Lamp (dial).....	5316
⑩ Compensating Condenser (Osc. H. F.).....	Part of ⑧	③⑥ On-Off Switch.....	42-1040
⑪ Oscillator Transformer.....	32-1519	③⑦ Ballast Tube Resistor (20 ohms)	
⑫ Condenser (.0008 mfd. mica).....	5878	(Used on Model 38-A only).....	33-3043
⑬ Resistor (32000 ohms) (Orange-Red-Orange)...	5279	③⑧ Resistor (.1 meg.) (White-White-Yellow).....	6099
⑭ Compensating Condenser (Osc. L. F.).....	04000-S	③⑨ Resistor (13000 ohms) (Brown-Orange-Orange)...	33-1160
⑮ Resistor (160000 ohms) (Brown-Blue-Yellow)...	33-1191	④① Condenser (.006 mfd.).....	30-4125
⑯ Compensating Condenser (1st I. F. Pri.).....	04000-A	Dial Assembly.....	31-1408
⑰ First I. F. Transformer.....	32-1251	Scale.....	27-5068
⑱ Compensating Condenser (1st I. F. sec.).....	04000-A	4 Prong Socket.....	7545
⑲ Compensating Condenser (2nd I. F. pri.).....	04000-A	6 Prong Socket.....	7547
⑳ Second I. F. Transformer.....	32-1252	Speaker Socket.....	7828
㉑ Compensating Condenser (2nd I. F. sec.).....	04000-A	Shorting Jumper (Ballast Tube Socket).....	28-8061
㉒ Filter Condenser Block (.25-.5-.15-.1-.5).....	03915	Tube Shield (Fits Inside Base).....	28-1107
㉓ Resistor (.5 meg.) (Yellow-White-Yellow).....	4517	Tube Shield (Fits Over Base).....	8005
㉔ Condenser (.00025 mfd. mica).....	3082	Battery Cable Assembly (With Plug).....	38-5265
㉕ Resistor (25000 ohms) (Red-Green-Orange)...	4516	Knob.....	27-4052
㉖ Condenser (.00025 mfd. mica).....	3082		

MODEL 39

I. F.—460 K. C





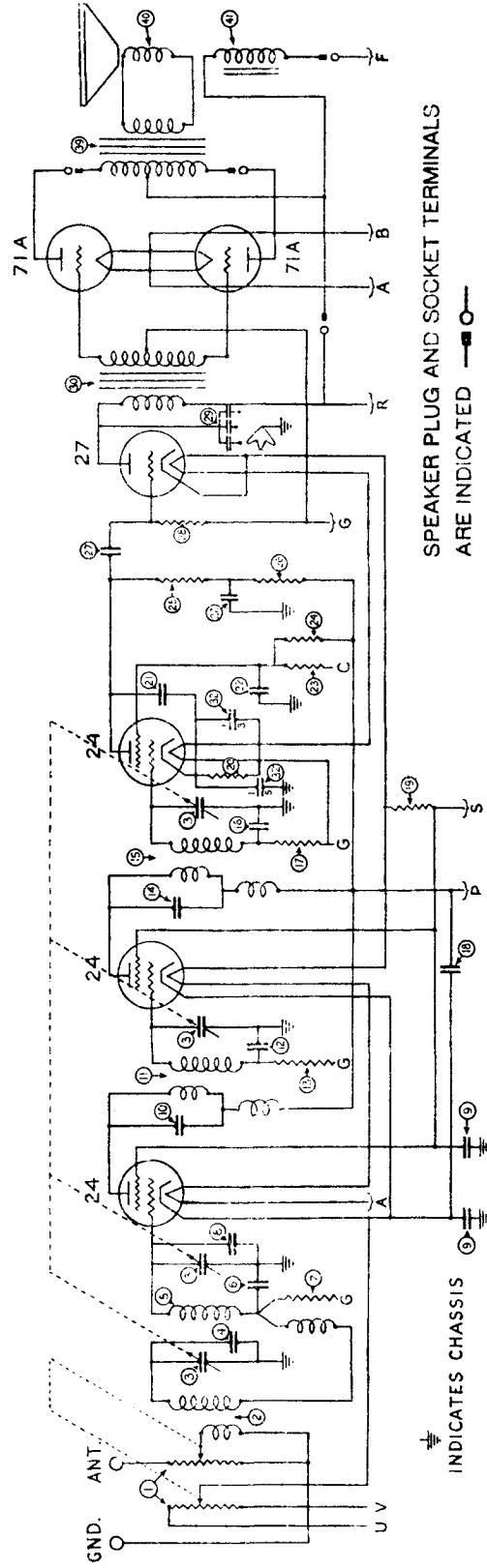
Replacement Parts—Model 39


Nos. on Fig. 3 & 4	Description	Part No.
①	Wave Trap.....	38-5994
②	Wave Band Switch.....	42-1092
③	Antenna Transformer.....	32-1548
④	Condenser (.00125 mfd. mica).....	5886
⑤	Condenser (.0014 mfd. mica).....	7007
*⑥	Resistor (50000 ohms) (Green-Brown-Orange).....	6098
*⑦	Tuning Condenser Assembly.....	31-1440
*⑧	Compensating Condenser (Ant.).....	Part of ⑦
*⑨	Compensating Condenser (S. W. Maximum).....	04000-V
⑨ ^a	Condenser (capacity from twisted wires).....	
⑩	Compensating Condenser (Osc. H. F. Bdcst).....	Part of ⑦
⑪	Oscillator Transformer.....	32-1549
⑫	Compensating Condenser (Osc. L. F. Bdcst).....	04000-S
⑬	Resistor (50000 ohms) (Green-Brown-Orange).....	6098
⑭	Compensating Condenser (Short-wave Minimum).....	04000-R
⑮	Condenser (.0025 mfd. mica).....	7006
*⑯	Compensating Condenser (1st I. F. pri.).....	Part of ⑰
⑰	1st I. F. Transformer.....	32-1550
*⑱	Compensating Condenser (1st I. F. sec.).....	Part of ⑰
⑲	Resistor (5000 ohms) (Green-Black-Red).....	6096
⑳	Condenser (Metal Case, 4 sec.: .5, .25, .25, .25 mfd.).....	30-4253
*㉑	Compensating Condenser (2nd I. F. pri.).....	Part of ㉒
㉒	2nd I. F. Transformer.....	32-1551
*㉓	Compensating Condenser (2nd I. F. sec.).....	Part of ㉒
㉔	Resistor (50,000 ohms) (Green-Brown-Orange).....	6098
㉕	Condenser (.0001 mfd. twin bakelite block).....	8035-C
㉖	Resistor (2 meg.) (Red-Black-Green).....	33-1025
㉗	Volume Control & On-Off Switch.....	33-5020

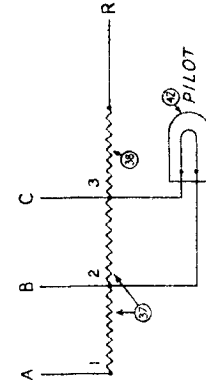
*Do not show in Fig. 4.

Nos. on Fig. 3 & 4	Description	Part No.
㉘	Condenser (.01 mfd. bakelite block).....	3903-AD
㉙	Resistor (1 meg.) (Brown-Black-Green).....	33-1096
㉚	Resistor (330000 ohms) (Orange-Orange-Yellow).....	6046
㉛	Resistor (70000 ohms) (Violet-Black-Orange).....	33-1115
㉜	Resistor (.25 meg.) (Red-Yellow-Yellow).....	33-1097
㉝	Condenser (.01 mfd. bakelite block).....	3903-AD
㉞	Resistor (5 meg.) (Yellow-White-Yellow).....	6097
㉟	Tone Control (2 pt.).....	30-4251
*㊱	Condenser (in tone control).....	Part of ㉞
㊲	Audio Transformer.....	7233
㊳	Condenser (.002 mfd. tubular).....	30-4177
*㊴	Output Transformer.....	32-7286
*㊵	Cone & Voice Coil Assembly (KR-7 Speaker).....	36-3159
㊶	Condenser (.05 mfd. bakelite block).....	3615-BC
*㊷	Pilot Lamp (dial).....	5316
	Dial Assembly.....	31-1471
	Tube Shield (fits over base).....	8005
	Tube Shield (fits inside base).....	28-1107
	Tube Socket (4-prong).....	7545
	Tube Socket (6-prong).....	7547
	Chassis Mounting Screw.....	W-567
	Chassis Mounting Washer (39-B).....	5058
	Chassis Mounting Washer (39-F).....	W-315A
	Chassis Mounting Washer (rubber).....	5189
	Knob.....	27-4052
	Battery Cable Assembly (with plug).....	41-3118
	Ballast Tube Jumper Wire.....	28-8061

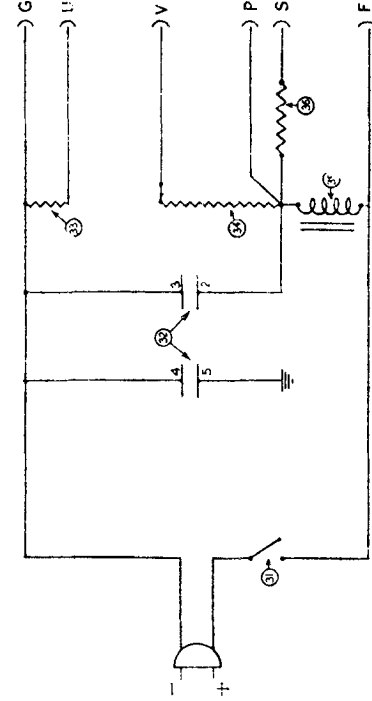
Model 41



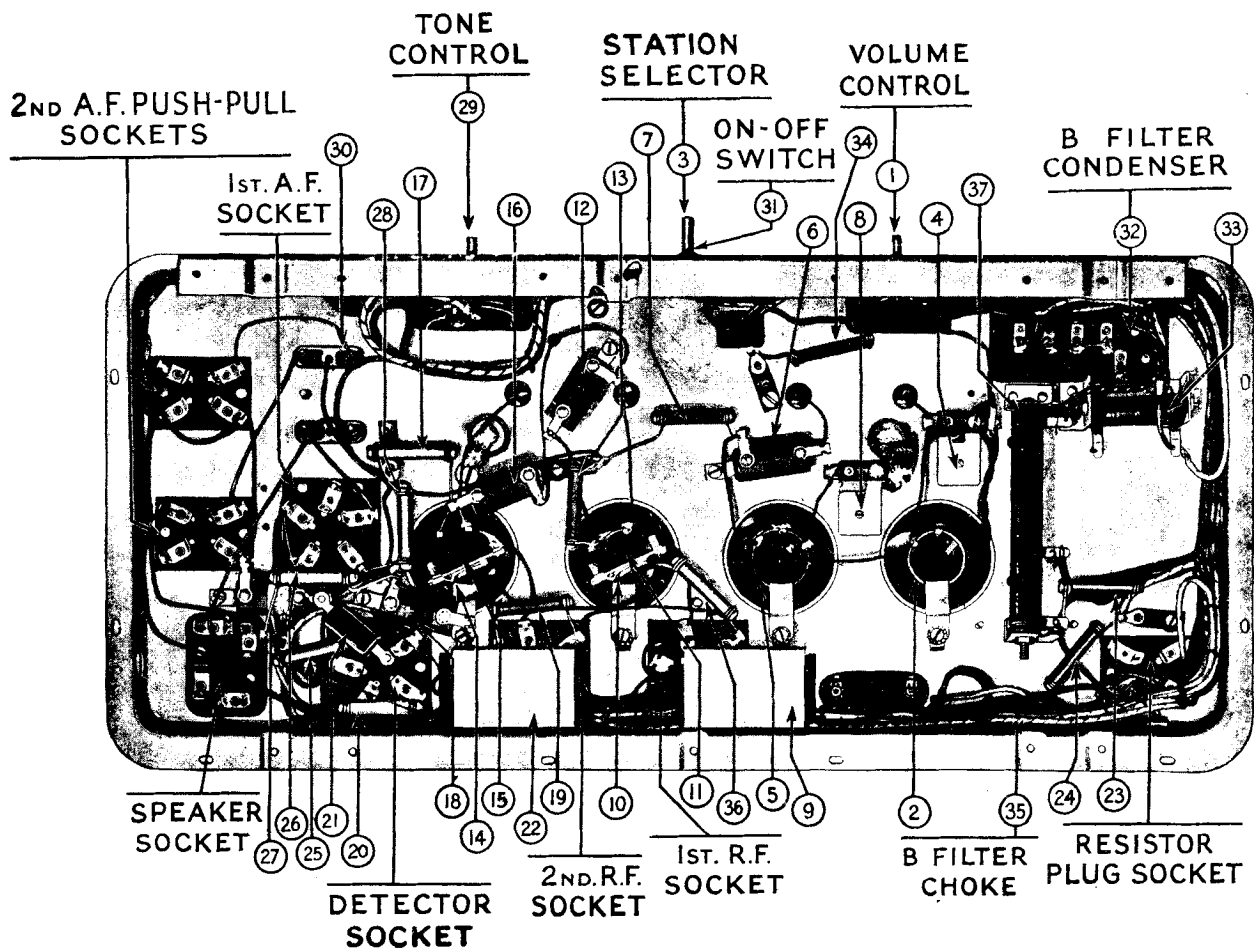
**SPEAKER PLUG AND SOCKET TERMINALS
ARE INDICATED — **



RESISTOR 38 IS MOUNTED AT BOTTOM OF CABINET



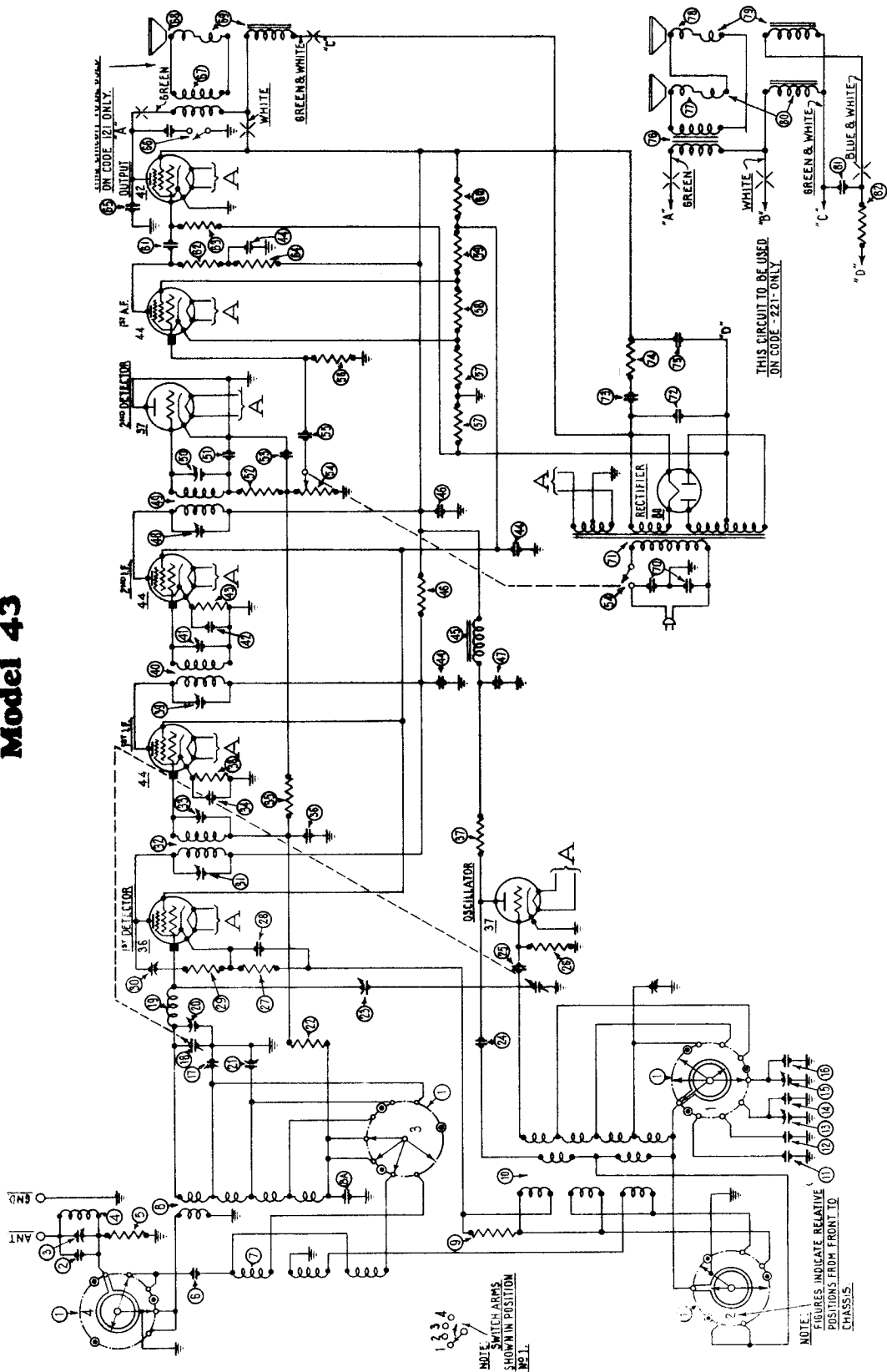
Model 41



REPLACEMENT PARTS

①	Volume Control	4094	③⑤	Choke	3422
②	First R. F. Transformer	3884-A	③⑥	Resistor	3526
③	Tuning Condenser	4069-E	③⑦	Resistor	4057
④	Compensating Condenser	3772-A	③⑧	Resistor	4058
⑤	Second R. F. Transformer	3884-B	③⑨	Output Transformer	2848
⑥	By-Pass Condenser	3584-D	④⑥	Voice Coil and Cone	2814-B
⑦	Resistor	3525	④⑦	Field Coil	2799
⑧	Compensating Condenser	3772-A	④⑧	Pilot Lamp	3463
⑨	By-Pass Condenser	3557-A	④⑨	Resistor Conn. Plug	4071
⑩	Coupling Condenser	3892-A		Knobs (Large)	3580-A
⑪	Third R. F. Transformer	3884-C		Knobs (Small)	3579-A
⑫	By-Pass Condenser	3584-D		Knobs (Switch)	3676-A
⑬	Resistor	3525		Spring (Knob)	3305
⑭	Coupling Condenser	3892-A		Grid Clip	4060
⑮	Fourth R. F. Transformer	3884-C		Grid Clip Insulator	4061
⑯	By-Pass Condenser	3584-D		Condenser Shield	4065
⑰	Resistor	3526		Tube Shield	3878-A
⑱	By-Pass Condenser	3584-D		Cushion (Condenser Brace)	3914
⑲	Resistor	3656		Rubber Washer (Cond. Brace)	3915
⑳	Resistor	3767		Rubber Washer (Condenser)	3920
㉑	By-Pass Condenser	3774		Speaker Plug and Cable	L-1056-A
㉒	By-Pass Condenser	3557-A		Rubber Washer (Furniture)	3558
㉓	Resistor	3766		Pilot Insulator	4054
㉔	Resistor	3542		Pilot Guard	4055
㉕	Resistor	3769		Condenser Brush	3748
㉖	Resistor	3767		R. F. Transformer Shield	3862
㉗	By-Pass Condenser	3897-A		Bottom Plate	3406
㉘	Resistor	3769		Compensating Condenser Nut	3151
㉙	Tone Control	4037-A		Tuning Scale	3794
㉚	Input Transformer	3872		Condenser Cable	3484
㉛	On-Off Switch	3517		Condenser Cable Spring	3012
㉜	Filter Condenser Block	4067		Pilot Lamp	3463
㉝	Resistor	4142		4-hole Tube Socket	3423-A
㉞	Resistor	3656		5-hole Tube Socket	3442-A

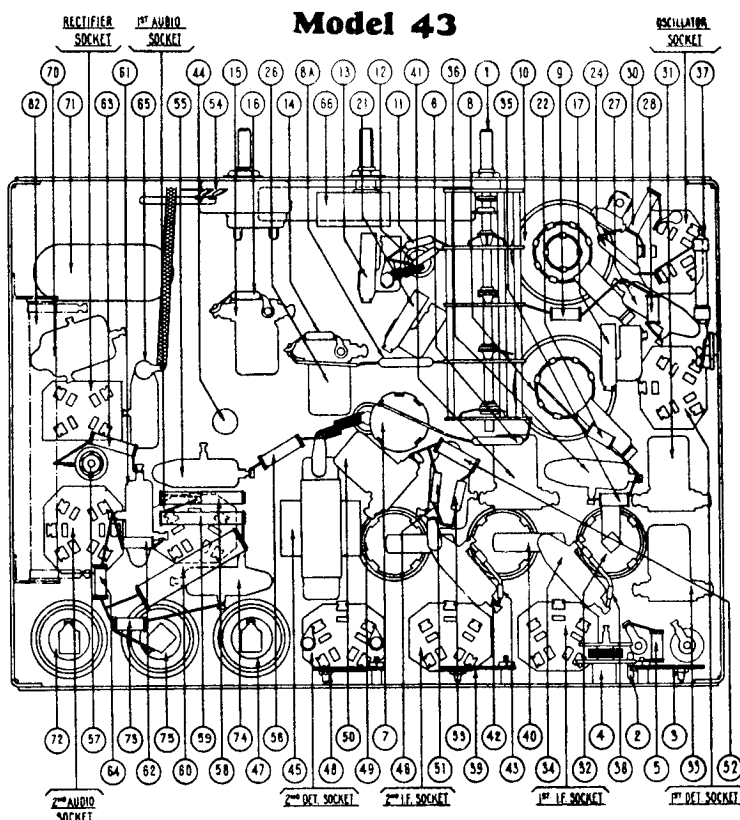
Model 43



Replacement Parts

Model 43

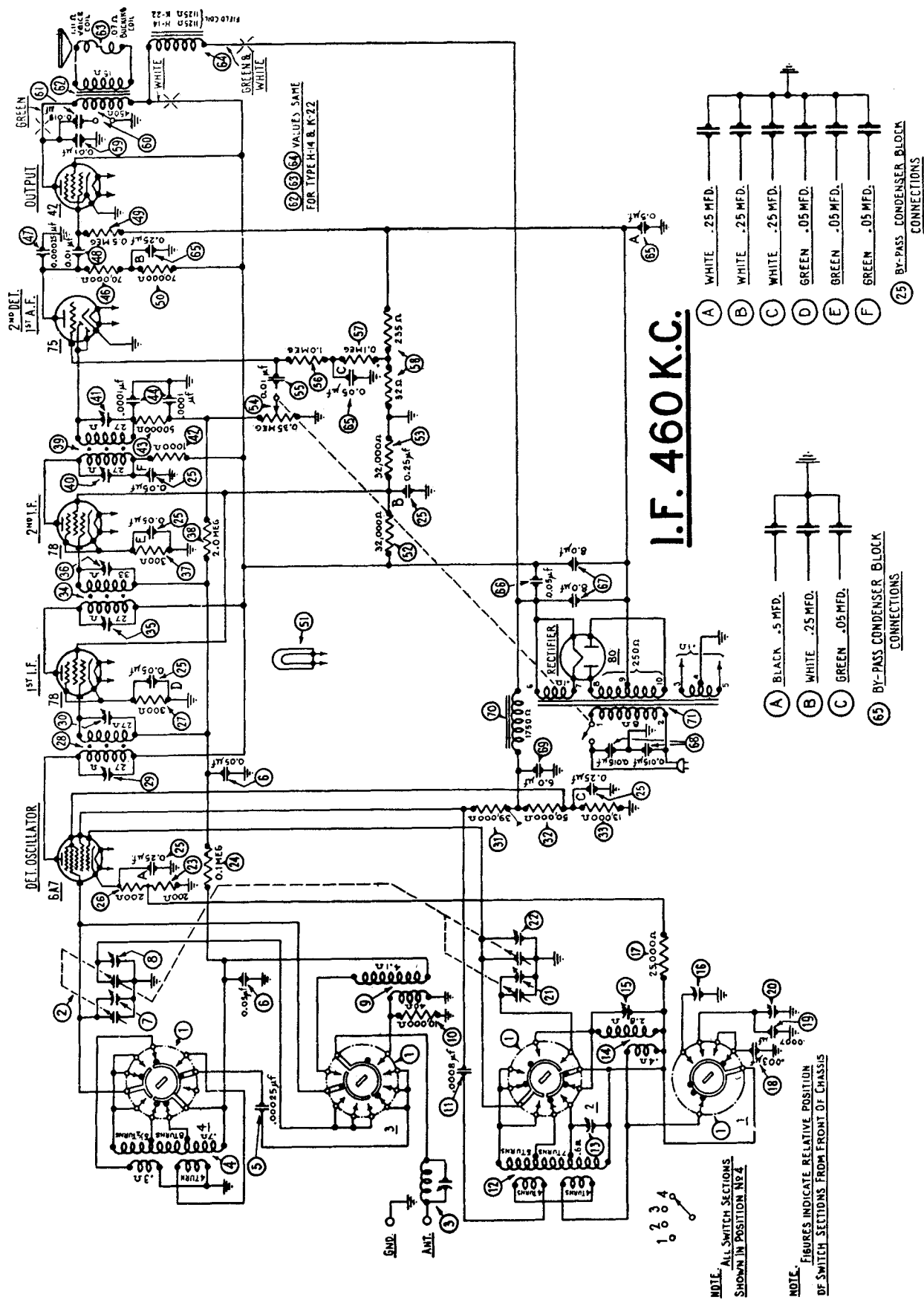
No. on Figs. 2 and 3	Description	Part No.
①	Wave Change Switch	05617
②	Condenser (410 mmf.)	5120
③	Compensating Condenser—450 K. C. Wave Trap	04000B
④	R. F. Choke	05191
⑤	Resistor (2,000 ohms)	6984
⑥	Condenser (1000 mmf.)	5215
⑦	Antenna Coupling Coil	05189
⑧	Antenna Transformer *	06404
⑨a	Condenser (3,000 mmf.)	6009
⑨	Resistor (1,000 ohms)	5837
⑩	Oscillator Coil *	05624
⑪	Condenser (1,650 mmf.)	5877
⑫	Condenser (1,250 mmf.)	5886
⑬	Compensating Condenser—1400 K. C. End of Second Band	04000F
⑭	Condenser (250 mmf.)	3082
⑮	Compensating Condenser—600 K. C. End of First Band	04000F
⑯	Condenser (250 mmf.)	3082
⑰	Compensating Condenser—8 Megacycle End Third Band	04000V
⑱	Tuning Condenser Assembly	05154
⑲	Grid Coil (Top of Chassis)	05190
⑳	Compensating Condenser (Part of Tuning Cond. Assembly)	
㉑	Compensating Condenser (3.5 Megacycle End of Second Band)	04000V
㉒	Resistor (99,000 ohms)	4411
㉓	Neutralizing Condenser (Top of Chassis)	04000V
㉔	Condenser (1000 mmf.)	5837
㉕	Condenser (50 mmf.) (Top of Chassis)	3774
㉖	Resistor (490,000 ohms)	4517
㉗a	Compensating Condenser (1400 K. C. End of First Band)	04000F
㉘	Resistor (25,000 ohms)	4516
㉙	Condenser (.05 mfd.)	3615E
㉚	Resistor (500 ohms)	6977
㉛	Compensating Condenser	04000C
㉜	Compensating Condenser—1st I. F. Primary	04000M
㉝	First I. F. Transformer	05185
㉞	Compensating Condenser—1st I. F. Secondary	04000M
㉟	Condenser (.05 mfd.)	3615W
㊱	Resistor (2,000,000 ohms)	5872
㊲	Condenser (.05 mfd.)	3615J
㊳	Resistor (10,000 ohms)	3524
㊴	Resistor (500 ohms)	6977
㊵	Compensating Condenser—2nd I. F. Primary	04000M
㊶	Second I. F. Transformer	05185
㊷	Compensating Condenser—2nd I. F. Secondary	04000X
㊸	Condenser (.05 mfd.)	3615W
㊹	Resistor (500 ohms)	6977
㊺	Filter Condenser Bank (.25, 2-5 mfd.)	05239
㊻	Filter Choke	5930
㊼	Condenser (.05 mfd. and Resistor 250 ohms)	3615AS
㊽	Electrolytic Condenser	7556
㊾	Compensating Condenser—3rd I. F. Primary	04000M
㊿	Third I. F. Transformer	05185
1	Compensating Condenser—3rd I. F. Secondary	04000M
2	Condenser (110 mmf.)	4519
3	Resistor (99,000 ohms)	4411
4	Condenser (110 mmf.)	4519
5	Volume Control and On-Off Switch	6892
6	Condenser (.01 mfd.)	3903F
7	Resistor (1,000,000 ohms)	4409
8	Wire Wound Resistor (185 and 245 ohms)	6452
9	Resistor (5,000 ohms)	3526
10	Resistor (5,000 ohms)	3526
11	Resistor (13,000 ohms)	6450
12	Condenser (.01 mfd.)	3903N
13	Resistor (70,000 ohms)	5385
14	Resistor (490,000 ohms)	4517
15	Resistor (25,000 ohms)	4516
16	Condenser (.01 mfd.)	3903AA
17	Tone Control	05174



①	Output Transformer	2560
②	Voice Coil and Cone Assembly	02823
③	Speaker Field and Bucking Coil Assembled with Pot (K-7)	02761
④	Condenser (.015 mfd. Double)	3793K
⑤	Power Transformer—50-60 Cycles, 115 Volts, Single Speaker Models	7074
	25-40 Cycles, 115 Volts, Single Speaker Models	7075
	50-60 Cycles, 230 Volts, " " "	7076
	50-60 Cycles, 115 Volts, Twin Speaker Models	6985
	50-60 Cycles, 230 Volts, " " "	6986
⑥	Electrolytic Condenser (6 mfd.) 50-60 Cycles	4916
	Electrolytic Condenser (8 mfd.) 25-40 Cycles	6707
⑦	Resistor (10,000 ohms)	4412
⑧	Condenser (.05 mfd.)	3615AD
⑨	Electrolytic Condenser (6 mfd.) 50-60 Cycles	4916
	Electrolytic Condenser (8 mfd.) 25-40 Cycles	6706
⑩	Output Transformer—Twin Speaker	2564
⑪	Voice Coil and Cone Assembly	02823
⑫	Voice Coil and Cone Assembly	02823
⑬	Speaker Field and Bucking Coil Assembled with Pot (K-9)	02762
⑭	Speaker Field and Bucking Coil Assembled with Pot (K-10)	02767
⑮	Condenser (.5 mfd.)	05150
⑯	Wire Wound Resistor (5,620 ohms) Twin Speaker	6451
	Tube Shield	5387
	Knob (Large)	03063
	Knob (Medium)	03064
	Knob (Small)	03437
	Knob Spring (Large)	5262
	Knob Spring (Small)	4147
	Grid Clip	4897
	Four Prong Socket Assembly	5026
	Five Prong Socket Assembly	4956
	Six Prong Socket Assembly	6417
	Dial Complete	05418
	Bezel	6826
	Tuning Condenser Drive Cord	04834
	Spring	6508
	Chassis Mounting Screw	W-468
	Mounting Washer	W-315
	Rubber Washer	5189

*Supplied in matched pair—Antenna and oscillator coils.

MODEL 44



MODEL 44

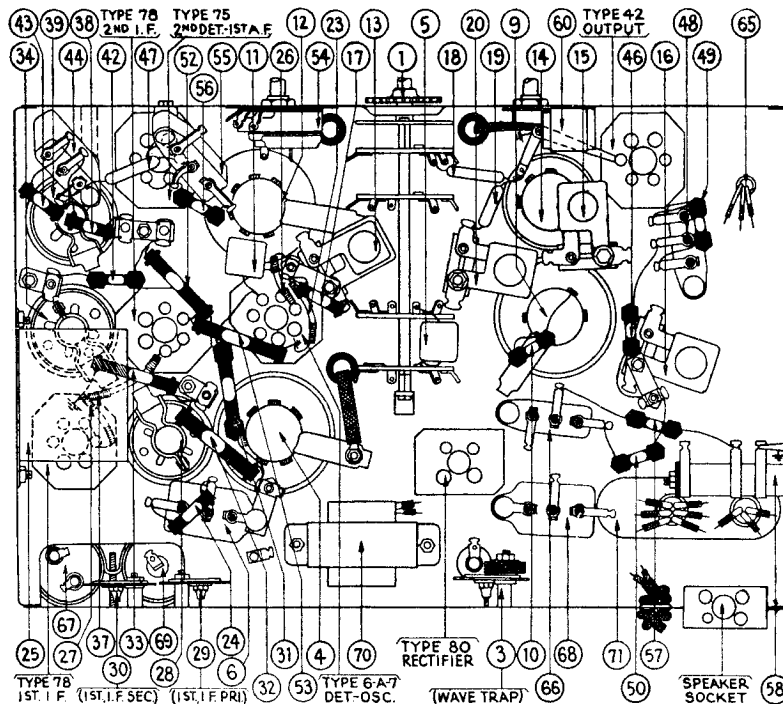


FIG. 4—Bottom View of Chassis, Showing Parts, and Position of Compensating Condensers Located,—and Reached,—from Below Chassis

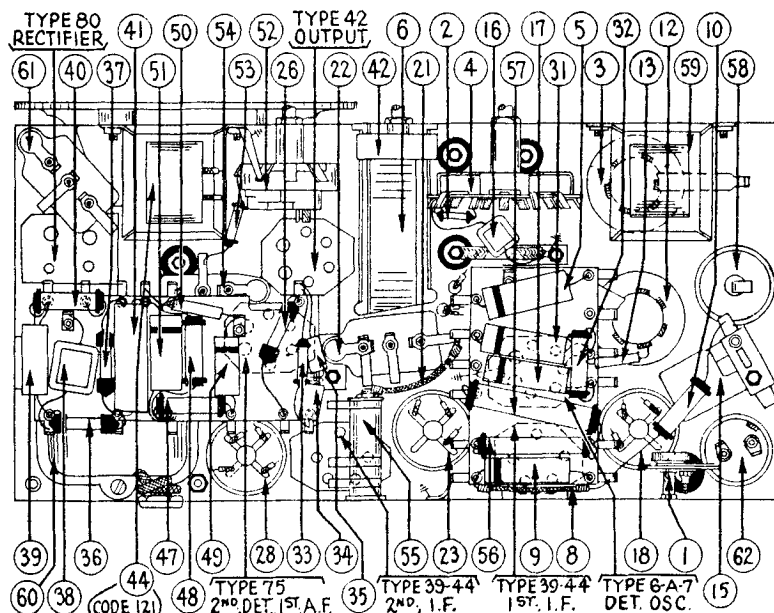
REPLACEMENT PARTS FOR MODEL 44

No. on Figs.	Description	Part No.	No. on Figs.	Description	Part No.
1	Wave-Band Switch.....	42-1045	46	Resistor (70,000) (Violet-Black-Orange).....	5385
2	Tuning Condenser Assembly.....	31-1106	47	Condenser (.00025).....	5858
3	Wave Trap.....	38-5199	48	Condenser (.01).....	3903-AN
4	Antenna Transformer (H. F. Bands).....	32-1271	49	Resistor (.5 meg.) (Yellow-White-Yellow).....	4517
5	Condenser (.00025).....	5858	50	Resistor (70,000) (Violet-Black-Orange).....	5385
6	Condenser (Double) (.05-.05).....	3615-AM	51	Pilot Lamp (Station Selector).....	6608
7	Compensating Condenser (Ant.; H. F.) (Part of 2).....		52	Resistor (32,000) (Orange-Red-Orange).....	3525
8	Compensating Condenser (Ant.; B'dc'st.) (Part of 2).....		53	Resistor (32,000) (Orange-Red-Orange).....	3525
9	Antenna Transformer (B'dc'st. Bands).....	32-1270	54	Volume Control and "On-Off" Switch.....	33-5025
10	Resistor (10,000) (Brown-Black-Orange).....	4412	55	Condenser (.01).....	3903-J
11	Condenser (.0008).....	5878	56	Resistor (1.0 meg.) (Brown-Black-Green).....	4409
12	Oscillator Transformer (H. F. Bands).....	32-1273	57	Resistor (.1 meg.) (White-White-Orange).....	4411
13	Compensating Condenser (Range 2).....	04000-C	58	Voltage Divider Resistor.....	33-3037
14	Oscillator Transformer (B'dc'st. Bands).....	32-1272	59	Condenser (.01) (Part of 60).....	
15	Compensating Condenser (Osc.; Range 1).....	04000-A	60	Tone Control.....	30-4080
16	Compensating Condenser (B'dc'st.; Series).....	04000-S	61	Condenser (.015) (Part of 60).....	
17	Resistor (25,000) (Red-Green-Orange).....	4516	62	Output Transformer (H-14).....	2580
18	Condenser (.003).....	6009	63	Voice Coil and Cone Assembly (H-14).....	02625
19	Condenser (.0007).....	5863	64	Speaker Field Coil and Pot Assembly (H-14).....	02767
20	Compensating Condenser (Range 2; Series).....	04000-R	65	By-pass Condenser Block (3-section).....	30-4087
21	Compensating Condenser (Osc.; Range 4) (Part of 2).....		66	Condenser (.05).....	3615-H
22	Compensating Condenser (Osc.; Range 3) (Part of 2).....		67	Condenser (Electrolytic) (Double) (8.0-8.0).....	30-2028
23	Resistor (200) (Flexible Wire-Wound) (Red-Black-Brown).....	7217	68	Condenser (Double) (.015-.015).....	3793-H
24	Resistor (.1 meg.) (White-White-Orange).....	4411	69	Condenser (Electrolytic) (6.0).....	30-2020
25	By-pass Condenser Block (6-section).....	30-4077	70	Filter Choke.....	5930
26	Resistor (200) (Flexible Wire-Wound) (Red-Black-Brown).....	7217	71	Power Transformer (50-60 cycle).....	32-7137
27	Resistor (300) (Flexible Wire-Wound) (Orange-Black-Brown).....	33-3010		Tube Shield.....	28-1107
28	1st. I. F. Transformer.....	32-1274		Four-Prong Tube Socket.....	7544
29	Compensating Condenser (1st. I. F. Pri.).....	04000-J		Six-Prong Tube Socket.....	7547
30	Compensating Condenser (1st. I. F. Sec.).....	04000-J		Seven-Prong Tube Socket.....	27-6005
31	Resistor (39,000) (Orange-White-Orange).....	33-1027		Speaker Socket.....	4957
32	Resistor (50,000) (Green-Brown-Orange).....	5868		Dial Scale (Station Selector).....	27-5028
33	Resistor (13,000) (Brown-Orange-Orange).....	3766		Drum Assembly (Tuning Condenser).....	31-1055
34	2nd. I. F. Transformer.....	32-1306		Idle Shaft Assembly (Tuning Condenser).....	31-1056
35	Compensating Condenser (2nd. I. F. Pri.).....	31-6007,		Tuning Shaft Assembly (Tuning Condenser).....	31-1057
36	Compensating Condenser (2nd. I. F. Sec.).....	(included as part of 34)		Gear (Wave-Band Switch).....	28-7012
37	Resistor (300) (Flexible Wire-Wound) (Orange-Black-Brown).....	33-3010		Knob (large).....	27-4025
38	Resistor (2.0 meg.) (Red-Black-Green).....	5872		Knob (medium).....	03063
39	3rd. I. F. Transformer.....	32-1307		Knob (small).....	03064
40	Compensating Condenser (3rd. I. F. Pri.).....	31-6007,		Knob Spring.....	5262
41	Compensating Condenser (3rd. I. F. Sec.).....	(included as part of 39)		Knob Screw (Brass) (Secures large knob to shaft).....	W-267
42	Resistor (1,000) (Brown-Black-Red).....	5837		Bezel.....	27-4039
43	Resistor (50,000) (Green-Brown-Orange).....	4518		Bezel Mounting Screw.....	W-841
44	Condenser (Double) (.0001-.0001).....	8035-K		Bezel Felt.....	6732
				Mounting Bolt (Chassis).....	W-567
				Mounting Washer (Chassis) (Rubber).....	5189
				Mounting Washer (Chassis) (Steel).....	5058
				Speaker (K-22) (Baby Grand Only):	
				Output Transformer.....	2580
				Voice Coil and Cone Assembly.....	26-3174
				Speaker Field Coil and Pot Assembly.....	02767

[illegible]

Note: Resistor ②1 is 500 ohms in current production.

MODEL 45

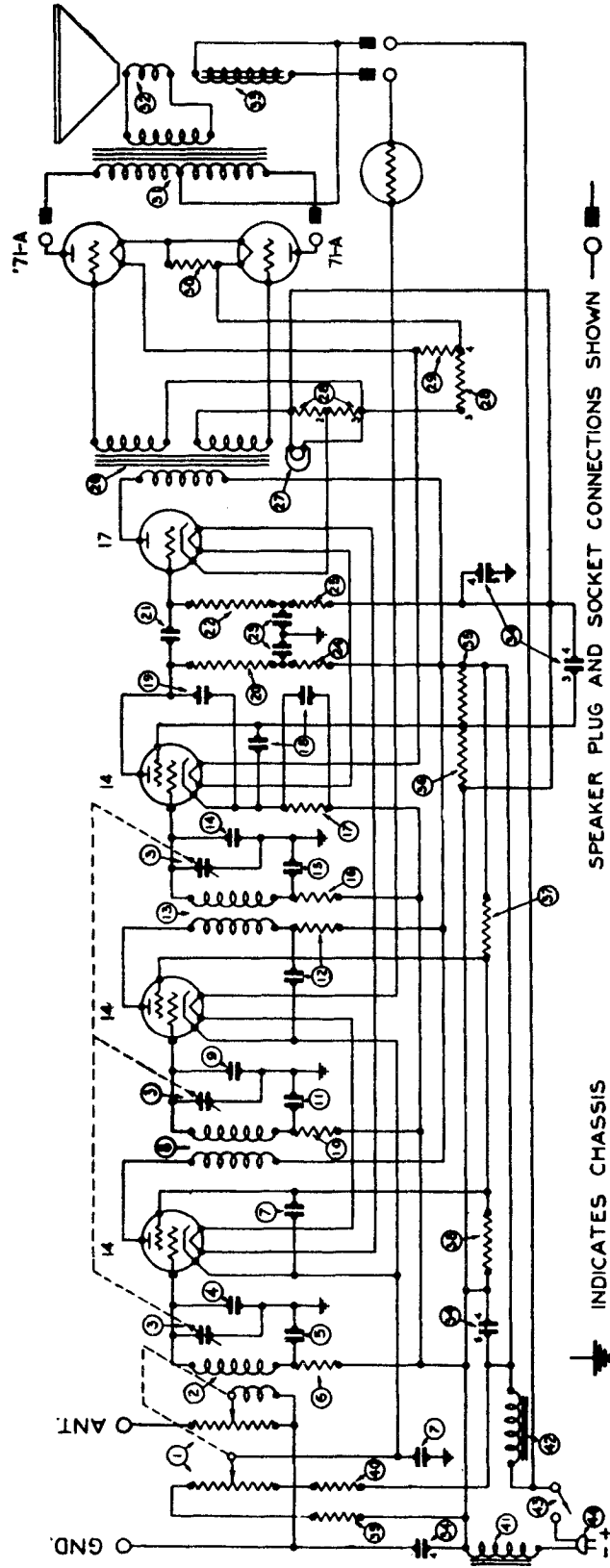


REPLACEMENT PARTS— MODEL 45

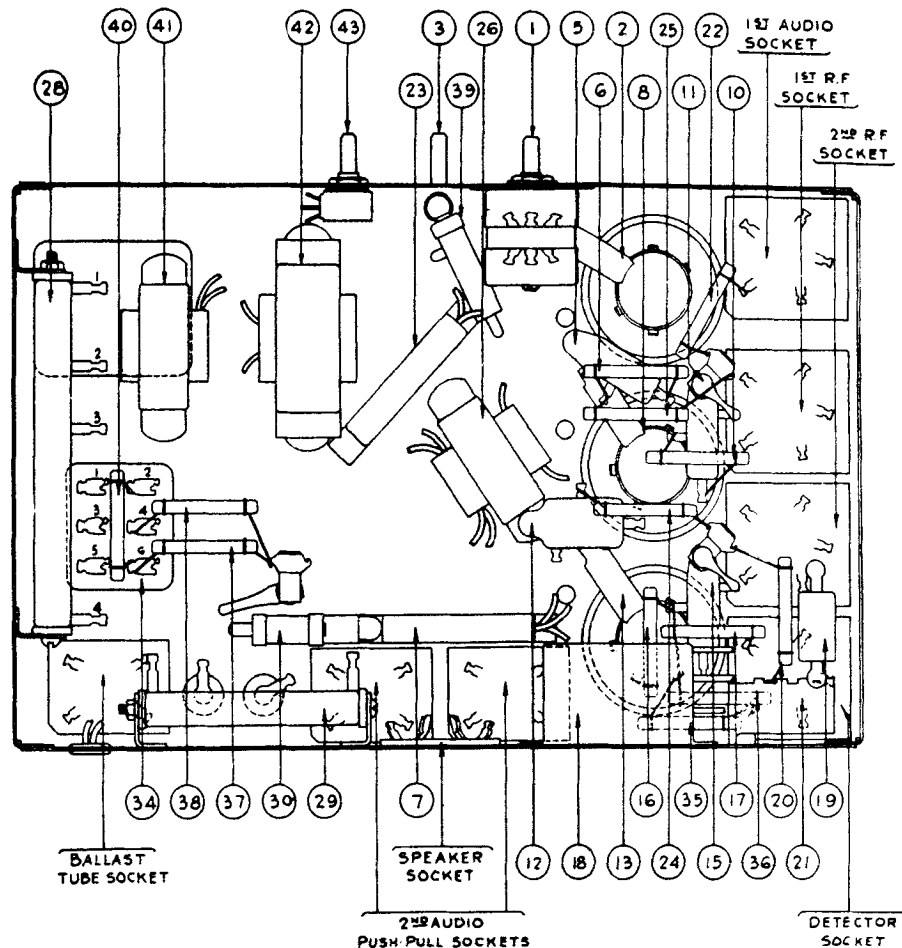
No. on Figs.	Description	Part No.	No. on Figs.	Description	Part No.
1	Wave Trap.....	38-5199	38	Condenser (.00025 Mfd. Mica).....	5858
2	Resistor (10,000 ohms) (Brown-Black-Orange).....	4412	39	Condenser (.02 Mfd. Tubular).....	30-4113
3	Antenna Transformer.....	32-1360	40	Resistor (.5 meg.) (Yellow-White- Yellow).....	4517
4	Wave Band Switch.....	42-1062	41	Condenser (.1 Mfd.) (Tubular).....	30-4170
5	Condenser (.1 Mfd.) (Tubular).....	30-4122	42	Tone Control.....	30-4178
6	Tuning Condenser Assembly.....	31-1169	43	Condensers.....	Inside 42
7	Compensating Condenser (Det.).....	Part of ⑥	44	Output Transformer (Code 121).....	32-7041
8	Resistor (400 ohms—Flexible wire wound).....	33-3016	45	Output Transformer (Code 122).....	2580
9	Condenser (.1 Mfd.) (Tubular).....	30-4122	45*	Voice Coil & Cone Assembly	
10	Resistor (25,000 ohms) (Red-Green-Orange).....	4516		P-19 (Compact).....	36-3027
11	Compensating Condenser (Osc. H. F.).....	Part of ⑥		K-22 (Lowboy).....	36-3174
12	Oscillator Transformer.....	32-1361	46*	Field Coil and Pot Assembly	
13	Condenser (.0008 Mfd.—Mica).....	5878		P-19 (Compact).....	36-3298
14*	Resistor (32,000 ohms) (Orange-Red-Orange).....	3525		K-22 (Lowboy).....	02767
15	Compensating Condenser (Osc. L. F.).....	04000-S	47	Resistor (1 meg.) (Brown-Black- Green).....	4409
16	Condenser (.003 Mfd.—Mica).....	7301	48	Resistor (.1 meg) (White-White- Orange).....	4411
17	Condenser (.05 Mfd.—Tubular).....	30-4123	49	Condenser (.01 Mfd. Tubular).....	30-4124
18	1st I. F. Transformer.....	32-1362	50	Condenser (.00025 Mfd. Mica).....	5858
19	Compensating Condenser (1st I. F. Primary).....	Part of ⑱	51	Condenser (.1 Mfd. Tubular).....	30-4122
20	Compensating Condenser (1st I. F. Secondary).....	Part of ⑱	52	Volume Control and On-Off Switch.....	33-5066
21	Resistor (500 ohms—Flexible wire wound).....	6977	53	Resistor 10,000 ohms (Brown-Black-Orange).....	33-1000
22	Condenser (.09 Mfd. twin) (Bakelite block).....	4989-Z	54	Condenser (Code 121) (.05 Mfd.) (Bakelite Block).....	3615-W
23	2d I. F. Transformer.....	32-1363		Condenser (Code 122) (.09 Mfd.) (Bakelite Block).....	4989-AM
24	Compensating Condenser (2d I. F. Primary).....	Part of ⑳	55	Voltage Divider (BC Resistor 22—235 ohms) (Wire wound).....	33-3037
25	Compensating Condenser (2d I. F. Secondary).....	Part of ⑳	56	Resistor .1 meg (White-White-Orange).....	3767
26	Resistor (2 megs.) (Red-Black-Green).....	5872	57	Resistor 32,000 ohms (Orange-Red-Orange).....	33-1026
27	Pilot Lamp.....	6608	58	Condenser (Electrolytic—6 Mfd.).....	30-2020
28	3d I. F. Transformer.....	32-1364	59	Filter Choke.....	32-7018
29	Compensating Condenser—3d I. F. Primary.....	Part of ㉑	60	Power Transformer.....	32-7226
30	Compensating Condenser—3d I. F. Secondary.....	Part of ㉑	61	Condenser (.015 Mfd. twin—Bakelite block).....	3793-E
31	Condenser (.05 Mfd. Tubular).....	30-4123	62	Condenser (Electrolytic 8—8 Mfd. 450 Volts).....	30-3028
32	Resistor (1,000 ohms) (Brown-Black- Red).....	5837	63	A. C. Cord and Plug Assembly.....	I-943-A
33	Resistor (50,000 ohms) (Green - Brown-Orange).....	4518		Tube Shield.....	28-1107
34	Condenser (.0001 Mfd. Mica).....	30-1031		Four Prong Socket.....	4955
35	Condenser (.0001 Mfd. Mica).....	30-1031		Five Prong Socket.....	4956
36	Resistor (70,000 ohms) (Violet-Black- Orange).....	5385		Six Prong Socket.....	6417
37	Resistor (70,000 ohms) (Violet-Black- Orange).....	5385		Seven Prong Socket.....	27-6005
				Speaker Socket (Lowboy set—code 122).....	4957
				Knob.....	27-4052
				Knob (Large) (Lowboy only).....	27-4051
				Dial Assembly.....	31-1208
				Dial Scale.....	27-5042
				Mounting screw (Compact set).....	W-1345
				Mounting Washer (Compact set).....	5058
				Foot (Rubber).....	27-4116

*Does not appear in Fig. above.

Model 46



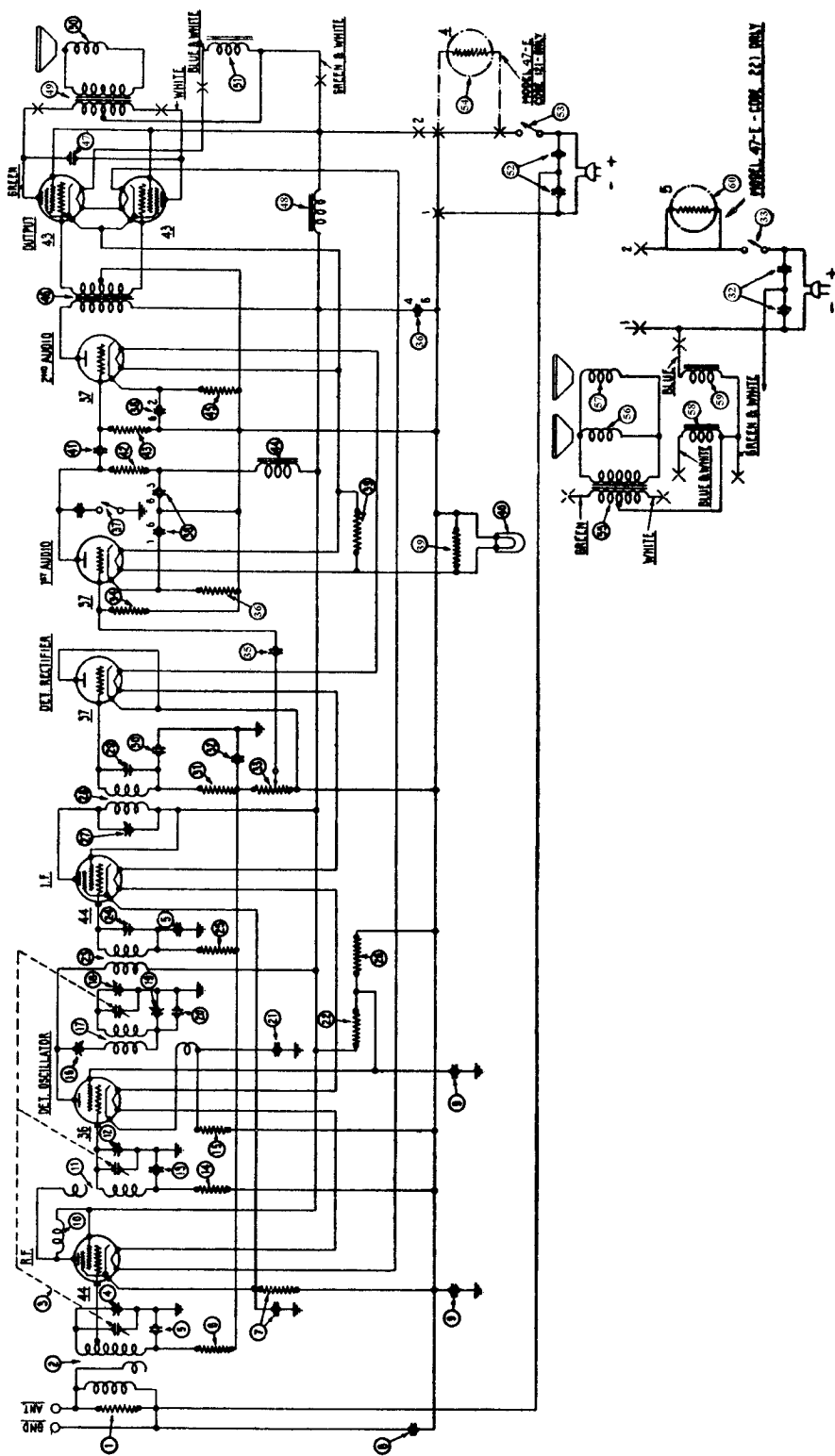
Model 46



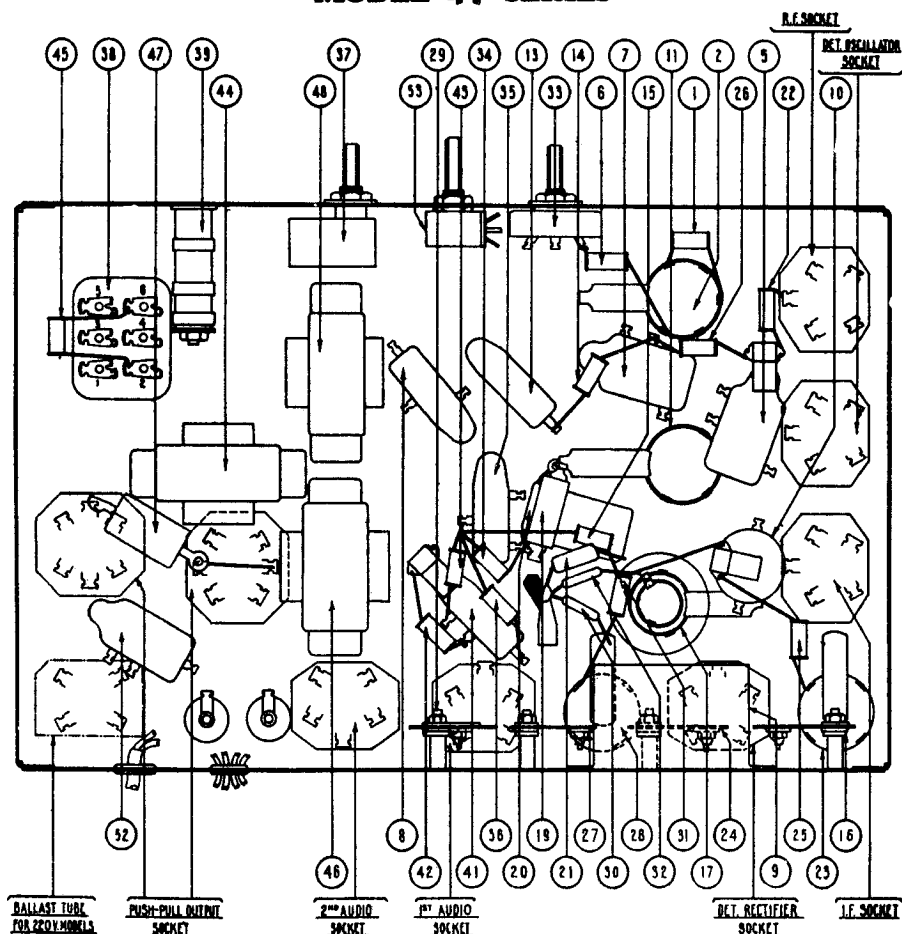
REPLACEMENT PARTS—MODEL 46

① Volume Control	4141	⑩ Field Coil	2694
② First R. F. Transformer	3884-X	⑪ Filter Condenser	4860
③ Tuning Condenser	4200-D	⑫ Resistor 70,000 Ohms	3542
④ Compensating Condenser (Part of Tuning Condenser Assembly)		⑬ Resistor 32,000 Ohms	3525
⑤ By-Pass Condenser .05	3615-J	⑭ Resistor 13,000 Ohms	3766
⑥ Resistor 32,000 Ohms	3525	⑮ Resistor 70,000 Ohms	3542
⑦ By-Pass Condenser .25	4864	⑯ Resistor 250 Ohms	4142
⑧ Second R. F. Transformer	3884-Y	⑰ Resistor 13,000 Ohms	3766
⑨ Compensating Condenser (Part of Tuning Condenser Assembly)		⑱ Line Choke (Neg.)	4886
⑫ Resistor 32,000 Ohms	3525	⑲ Line Choke (Pos.)	4231
⑬ By-Pass Condenser .05	3615-M	⑳ Set Switch	4095
⑭ Condenser and Resistor .05 and 250 Ohms	3615-K	㉑ Line Plug	L-543
⑮ Third R. F. Transformer	3884-Y	㉒ Line Cord and Plug	L-943
⑯ Compensating Condenser (Part of Tuning Condenser Assembly)		㉓ Tube Shield	4228-A
⑰ By-Pass Condenser .05	3615-M	㉔ Knob (Dial)	4289-A
⑱ Resistor 5,000 Ohms	3526	㉕ Spring (Dial Knob)	3305
⑲ Resistor 32,000 Ohms	3525	㉖ Knobs (Switch and Volume Control)	4290-A
㉑ By-Pass Condenser (2-section, .25 each)	4864	㉗ Spring (Switch and Volume Control Knob)	4147
㉒ By-Pass Condenser .0005	3910	㉘ Grid Clip	4060
㉓ Resistor 490,000 Ohms	3769	㉙ Grid Clip Insulator	4061
㉔ Blocking Condenser .01	3903-H	㉚ Speaker Plug and Cable	L-1124-A
㉕ Resistor 490,000 Ohms	3769	㉛ R. F. Transformer Shield	3862
㉖ By-Pass Condenser (2-section, .25 each)	4864	㉜ Grommet for R. F. Transformer Shield	3747
㉗ Resistor 99,000 Ohms	3767	㉝ Pilot Lamp Bracket	4871
㉘ Resistor 240,000 Ohms	3768	㉞ Four Prong Socket Assembly	3977-A
㉙ Push-Pull Input Transformer	4862	㉟ Five Prong Socket Assembly	3979-A
㉚ Pilot Bulb	3463	㊱ Speaker Socket	3977-B
㉛ Resistor (3-section)	4858-A	㊲ Volume Control Insulators	4092
㉜ Resistor 200 Ohms	4859-A	㊳ Volume Control Insulators	4286
㉝ Resistor 210 Ohms	4861	㊴ Cabinet	
㉞ Push-Pull Output Transformer	2766	㊵ Fahnestock Clip	L-1126
㉟ Voice Coil and Cone	2769-B	㊶ Finishing Rosettes	4267
		㊷ Speaker Mounting Screws (3 used)	W-493
		㊸ Speaker Mounting Screws (1 used)	W-483
		㊹ Tuning Condenser Dial Scale	4261
		㊺ Mica for Compensating Con- densers	4318

MODEL 47 SERIES



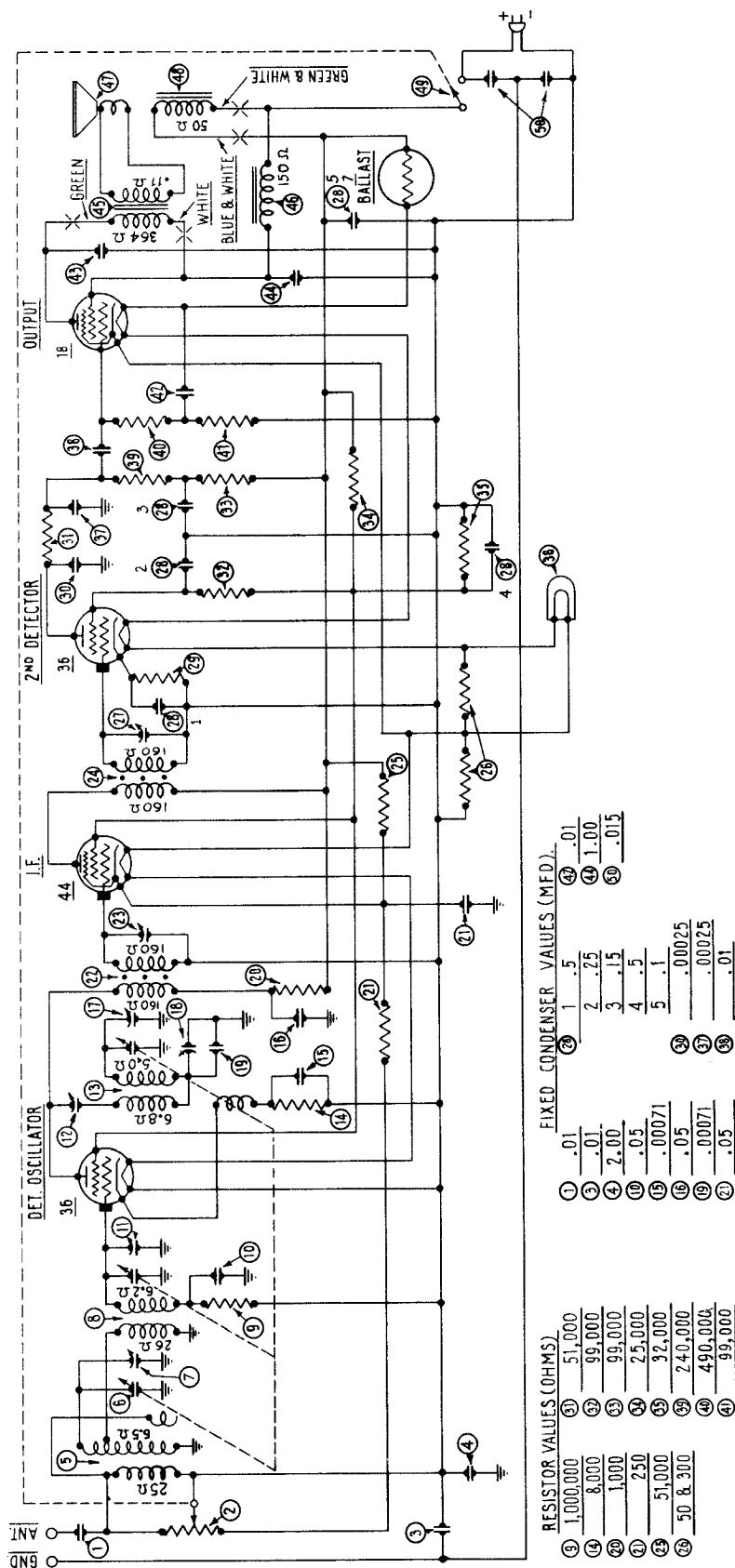
MODEL 47 SERIES



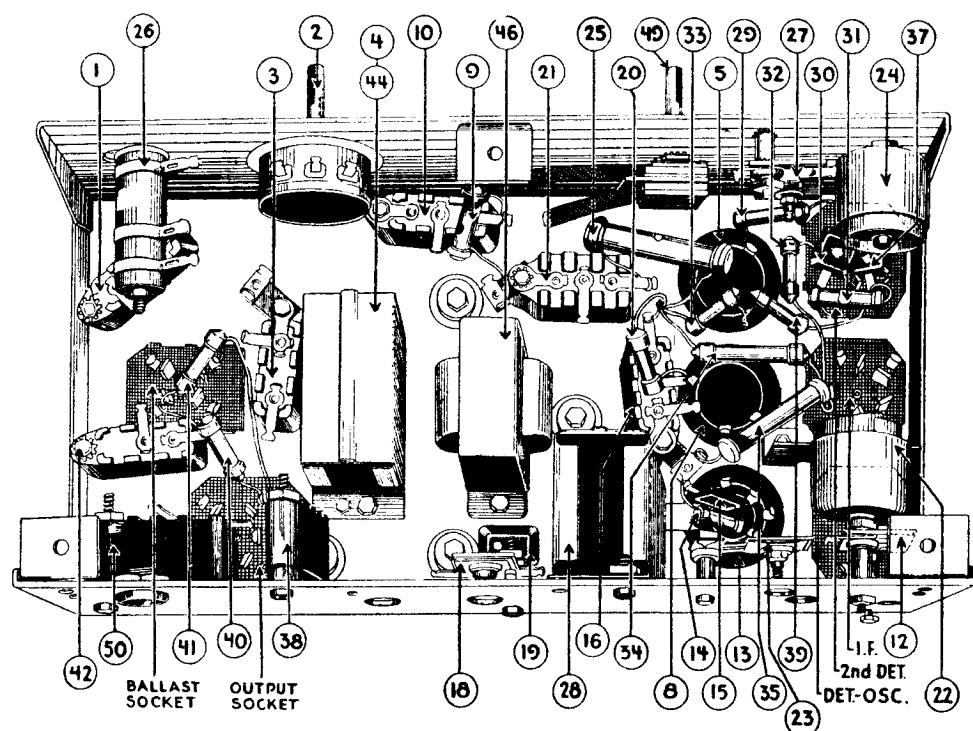
REPLACEMENT PARTS MODEL 47

① Resistor (10,000 ohms)	4412	Ⓜ Resistor (10,000 ohms)	4412
② R. F. Transformer	04339	Ⓨ Tone Control	04757
③ Tuning Condenser Assembly	05098	Ⓩ Filter Condenser Bank	05003
④ Compensating Condenser—R. F. —Part of Tuning Condenser Assembly		ⓐ Resistor—Wire wound (70 ohms and 16 ohms)	6716
⑤ Condenser (.05 Mfd. Double)	3615-AF	ⓑ Pilot Light	6608
⑥ Resistor (1,000,000 ohms)	4409	ⓓ Condenser (.01 Mfd.)	3093-T
⑦ Condenser (.18 Mfd. & 200 ohm resistor)	4989-S	ⓔ Resistor (25,000 ohms)	4516
⑧ Condenser (.05 Mfd.)	3615-H	ⓕ Resistor (1,000,000)	4409
⑨ Condenser (.25 Mfd. Double)	05109	ⓖ Filter Choke (High Resistance)	5314
⑩ R. F. Choke	03103	ⓗ Resistor (5,000 ohms)	5310
⑪ Detector Transformer	05093	ⓓ Input Transformer	6064
⑫ Compensating Condenser—De- tector—Part of Tuning Con- denser Assembly		ⓙ Condenser (.002 Mfd.) Blue	4059
⑬ Condenser (.05 Mfd.)	3615-L	ⓚ Filter Choke	6712
⑭ Resistor (1,000,000 ohms)	4409	ⓛ Output Transformer — Single Speaker (K-13)	2550
⑮ Resistor (8,000 ohms)	5838	ⓜ Voice Coil and Cone Assembly	02823
⑯ Compensating Condenser—1st I. F. Primary	04000-M	Ⓨ Speaker Field Assembled with Pot (K-13)	02745
⑰ Oscillator Coil	04186	Ⓩ Condenser (.015 Mfd. Double)	3793-M
⑱ Compensating Condenser—High Frequency—Part of Tuning Condenser Assembly		ⓐ On-off Switch	6496
⑲ Compensating Condenser—Low Frequency	04000-F	ⓑ Ballast Lamp No. 4—Single Speaker	6739
ⓐ Condenser (410 Mmf.) Yellow and Orange	5120	ⓓ Output Transformer — Twin Speaker (K-14, K-15)	2544
ⓑ Condenser (700 Mmf.) White and Yellow	5863	ⓔ Voice Coil and Cone Assembly	02823
ⓓ Resistor (25,000 ohms)	4516	ⓕ Voice Coil and Cone Assembly	02823
ⓕ First I. F. Transformer	05094	ⓖ Speaker Field Assembled with Pot (K-14)	02745
ⓖ Compensating Condenser—1st I. F. secondary	04000-A	ⓗ Speaker Field Assembled with Pot (K-15)	02744
ⓙ Resistor (1,000,000 ohms)	4409	ⓓ Ballast Lamp No. 5 — Twin Speaker	6740
ⓚ Resistor (70,000 ohms)	5385	Tube Shield	05058
ⓛ Compensating Condenser—2nd I. F. Primary	04000-A	Knob (large)	03063
ⓜ Second I. F. Transformer	05095	Knob (medium)	03064
Ⓨ Compensating Condenser—2nd I. F. Secondary	04000-A	Knob (small)	03437
Ⓩ Condenser (110 Mmf.) Blue and Golden Yellow	4519	Knob Spring (large)	5262
ⓐ Resistor (99,000 ohms)	4411	Knob Spring (small)	4147
ⓑ Condenser (110 Mmf.) Blue and Golden Yellow	4519	Grid Clip	4897
ⓓ Volume Control	6499	Four Prong Socket Assembly	5026
ⓕ Resistor (1,000,000 ohms)	4409	Five Prong Socket Assembly	4956
ⓖ Condenser (.01 Mfd.)	3903-G	Six Prong Socket Assembly	6417
		Dial Complete	04832
		Bezel	6435
		Chassis Mounting Screw	W-468
		Mounting Washer	W-315
		Rubber Washer	5189
		Mounting Clamp	6440
		Cone Retaining Ring	2600

MODEL 48



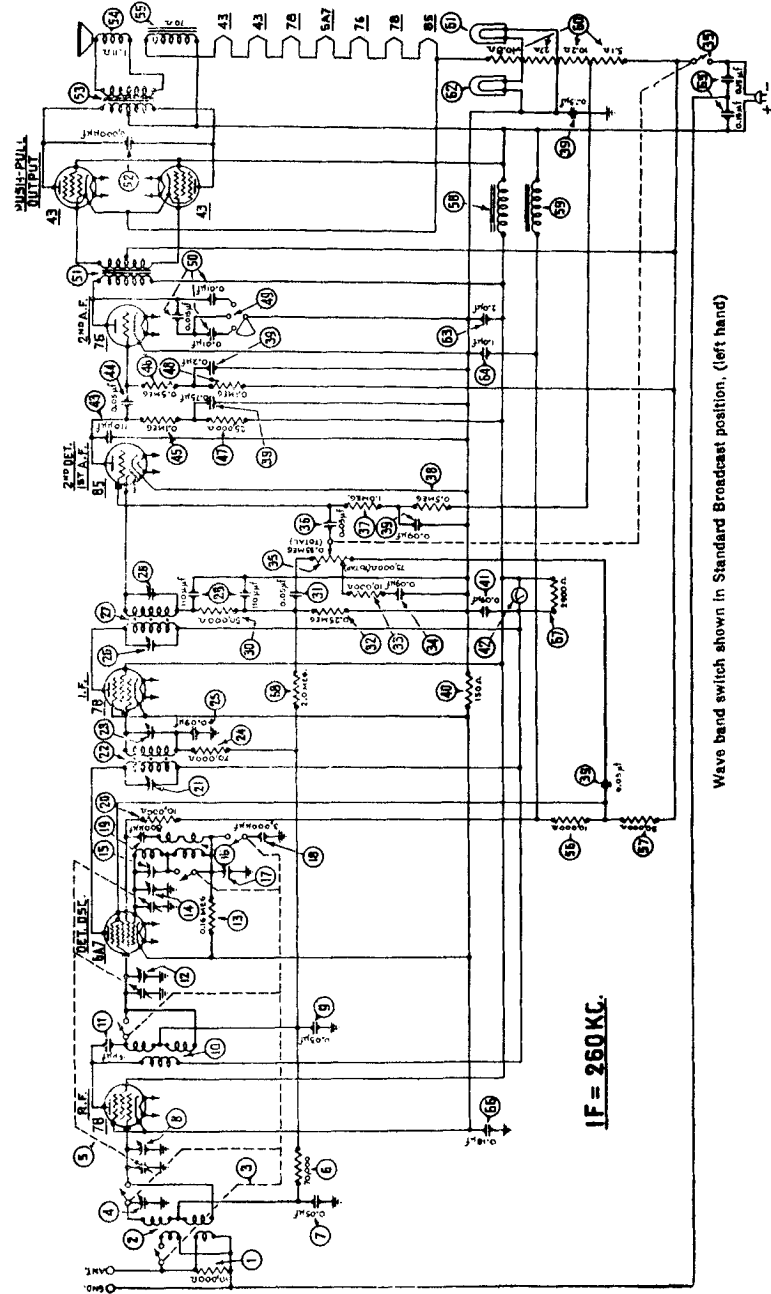
Model 48



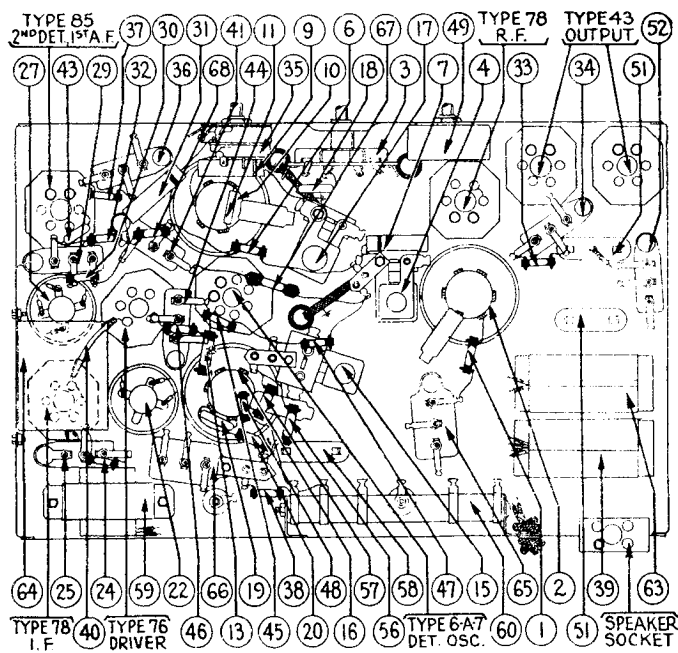
Replacement Parts for Model 48

①	Condenser (.01 Mfd.)	3903-T	②①	Resistor (51,000 Ohms)	4518
②	Volume Control (5,000 Ohms)	5839	③①	Condenser (250 Mmf.)	3082
③	Condenser (.01 Mfd.)	3903-AK	③②	Resistor (51,000 Ohms)	4518
④	Condenser (2 Mfd.)	05518	③③	Resistor (99,000 Ohms)	4411
⑤	Antenna Transformer	05848	③④	Resistor (99,000 Ohms)	4411
⑥	Tuning Condenser Assembly	05885	③⑤	Resistor (25,000 Ohms)	3656
⑦	Compensating Cond.—Antenna—Part of Tuning Condenser Assembly		③⑥	Resistor (32,000 Ohms)	3525
⑧	Detector Transformer	05849	③⑦	Pilot Light	6608
⑨	Resistor (1,000,000 Ohms)	4409	③⑧	Condenser (250 Mmf.)	3082
⑩	Condenser (.05 Mfd.)	3615-J	③⑨	Condenser (.01 Mfd.)	3903-F
⑪	Compensating Cond.—Detector, Part of Tuning Condenser Assembly		③⑩	Resistor (240,000 Ohms)	4410
⑫	Comp. Cond. First I.F. Primary	04000-A	③⑪	Resistor (490,000 Ohms)	4517
⑬	Oscillator Coil		③⑫	Resistor (99,000 Ohms)	4411
⑭	Resistor (6,000 Ohms)		③⑬	Condenser (.01 Mfd.)	3903-F
⑮	Condenser (710 Mmf.)	5863	③⑭	Condenser .01 Mmf. (assembled with ③)	3903AK
⑯	Condenser (.05 Mfd.)	3615-AC	③⑮	Condenser (1 Mfd.)	05518
⑰	Compensating Cond.—High Frequency —Part of Tuning Condenser Assembly		③⑯	Output Transformer	2660
⑱	Comp. Condenser Low Frequency	04000-F	③⑰	Choke	4951
⑲	Condenser (710 Mmf.)	5863	③⑱	Voice Coil and Cone Assembly	02861
⑳	Resistor (1000 Ohms)	5837	③⑲	Speaker Field Assembly with Pot	02671
㉑	Condenser (.05 Mfd. and Resistor 250 Ohms)	3615-C	③⑳	On-Off Switch Assembly with Volume Control	5839
㉒	First I.F. Transformer	04887	㉑	Condenser (.015 Mfd. Twin)	3793-P
㉓	Comp. Cond. First I.F. Secondary	04000-A		Tube Shield	03169
㉔	Second I.F. Transformer	03887		Knob	03064
㉕	Resistor (10,000 Ohms)	4237		Knob Spring	5262
㉖	Resistor—Wire Wound—(140 Ohms and 30 Ohms)	06200		Grid Clip	4897
㉗	Compensating Condenser, Second I.F. Secondary	04000-A		Four Prong Socket	5026
㉘	Filter Condenser Bank (.1, .15, .25, 2-5 Mfd.)	05569		Five Prong Socket	4956
				Six Prong Socket	6417
				Pilot Light Bracket Complete	05603
				Dial Complete	05811
				Bezel	6413

MODEL 49 (D. C.)



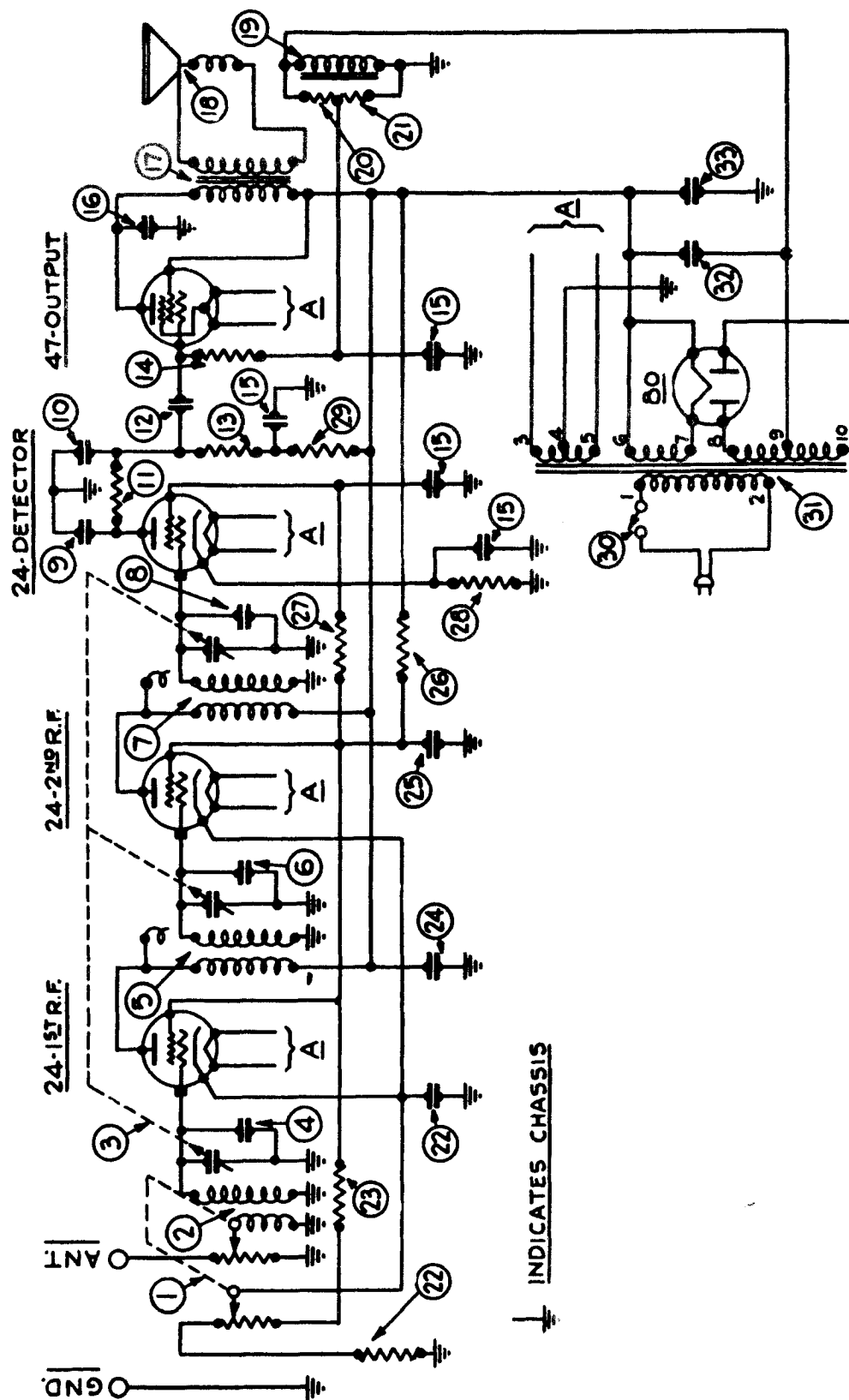
MODEL 49



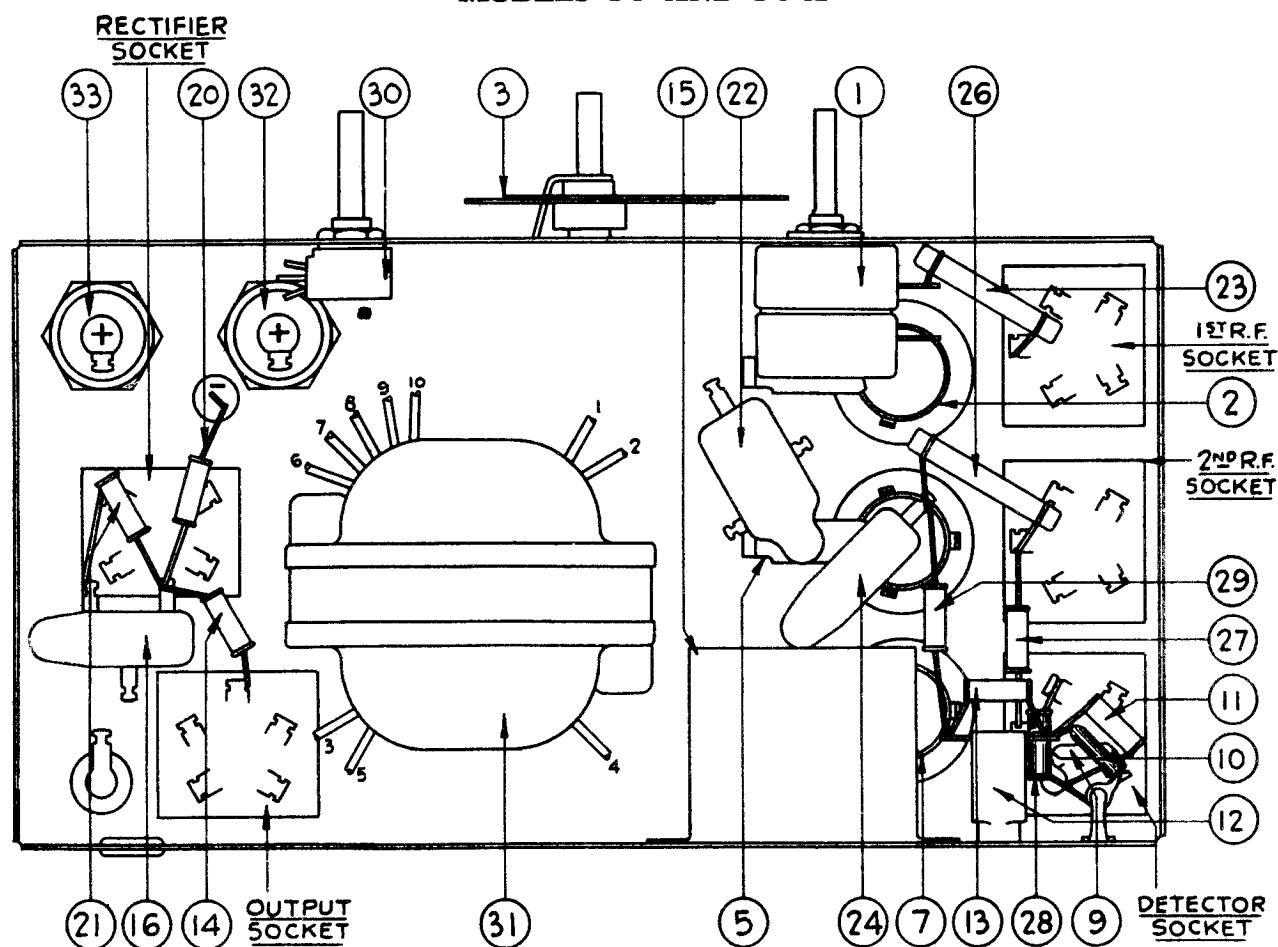
REPLACEMENT PARTS

Nos. on Diagram	Description	Part No.	Nos. on Diagram	Description	Part No.
(1)	Resistor (10,000 ohms) (Brown-Black-Orange)	33-1000	(42)	Shadowmeter	45-2042
(2)	Antenna (R. F.) Transformer	32-1379	(43)	Condenser (.00011 Mfd. Mica)	30-1006
(3)	Wave-band Switch	42-1046	(44)	Condenser (.05 Mfd. Bakelite Block)	3615AX
(4)	Compensating Condenser (Ant. S. W.)	04000D	(45)	Resistor (.1 Meg.) (White-White-Orange)	6099
(5)	Tuning Condenser Assembly	31-1334	(46)	Resistor (.5 Meg.) (Yellow-White-Yellow)	6097
(6)	Resistor (70,000 ohms) (Violet-Black-Orange)	33-1115	(47)	Resistor (25,000 ohms) (Red-Green-Orange)	33-1013
(7)	Condenser (.05 Mfd. Tubular)	30-4020	(48)	Resistor (.1 Meg.) (Yellow-White-Yellow)	6099
(8)	Compensating Condenser (Ant.)	Part of (5)	(49)	Tone Control	30-4043
(9)	Condenser (.05 Mfd. Tubular)	30-4020	(50)	Condensers in Tone Control	Part of (49)
(10)	Detector Transformer	32-1427	(51)	Audio Transformer	32-7211
(11)	Condenser (.000015 Mica)	30-1030	(52)	Condenser (.006 Mfd. Bakelite Block)	7625-E
(12)	Compensating Condenser (Det.)	Part of (6)	(53)	Output Transformer	2550
(13)	Resistor (160,000 ohms) (Brown-Blue-Yellow)	5331	(54)	Voice Coil and Cone Assembly	H-10 02625
(14)	Compensating Condenser (Osc. H. F.)	Part of (6)			K-13 36-3159
(15)	Compensating Condenser (Osc. S. W.)	31-6016	(55)	Field Coil and Pot Assembly	02745
(16)	Oscillator Transformer	32-1428	(56)	Resistor (10,000 ohms) (Brown-Black-Orange)	4412
(17)	Compensating Condenser (Osc. L. F.)	04000R	(57)	Resistor (50,000 ohms) (Green-Brown-Orange)	4518
(18)	Condenser (.003 Mfd. Mica)	30-1028	(58)	Filter Choke	32-7213
(19)	Condenser (.0008 Mfd. Mica)	6021	(59)	Filter Choke	32-7018
(20)	Resistor (10,000 ohms) (Brown-Black-Orange)	4412	(60)	B. C. Resistor (Wirewound: 5.1-10.2-27.0-10.8 ohms)	33-3128
(21)	Compensating Condenser (1st I. F. Primary)	Part of (22)	(61)	Pilot Lamp (Dial)	4567
(22)	First I. F. Transformer	32-1381	(62)	Pilot Lamp (Shadowmeter)	Part of (42)
(23)	Compensating Condenser (1st I. F. Secondary)	Part of (22)	(63)	Condenser (2.0 Mfd. Metal Case)	30-4140
(24)	Resistor 70,000 ohms (Violet-Black-Orange)	33-1115	(64)	Condenser (1.0 Mfd. Metal Case)	04357
(25)	Condenser (.09 Mfd. Bakelite Block)	4989N	(65)	Condenser (.15 Mfd. Twin Bakelite Block)	6287-T
(26)	Compensating Condenser (2d I. F. Primary)	Part of (27)	(66)	Condenser (.09 Mfd. Twin Bakelite Block)	4989AP
(27)	2d I. F. Transformer	32-1424	(67)	Resistor (2900 ohms) (Red-White-Red)	5309
(28)	Compensating Condenser (2d I. F. Secondary)	Part of (27)	(68)	Resistor (2 Meg.) (Red-Black-Green)	33-1025
(29)	Condenser (.00011 Twin Bakelite Block)	8035E		Dial Assembly	31-1205
(30)	Resistor (50,000 ohms) (Green-Brown-Orange)	6098		Dial Scale	27-5046
(31)	Condenser (.05 Mfd. Tubular)	30-4020		Knob (large)	27-4051
(32)	Resistor (250,000 ohms) (Red-Yellow-Yellow)	33-1097		Knob (small)	27-4052
(33)	Resistor (10,000 ohms) (Brown-Black-Orange)	33-1000		Five Prong Socket	7546
(34)	Condenser (.09 Mfd. Bakelite Block)	4989-P		Six Prong Socket	7547
(35)	Volume Control and On-Off Switch	33-5024		Seven Prong Socket	27-6005
(36)	Condenser (.05 Mfd. Bakelite Block)	3615-H		Chassis Mtg. Screw	W-1358A
(37)	Resistor (1 Meg.) (Brown-Black-Green)	33-1096		Chassis Mtg. Foot (Rubber)	27-4116
(38)	Resistor (.5 Meg.) (Yellow-White-Yellow)	6097		Chassis Mtg. Foot Plate	27-7497
(39)	Condenser (Metal Case Block) (.2-.75-.25-.05-.09)	30-4144		Chassis Mtg. Washer	29-2089
(40)	Resistor (200 ohms Flexible Wire-Wound)	7217		Speaker Socket	4957
(41)	Condenser (.09 Mfd. Bakelite Block)	4989P		Cord & Plug Assembly	L-943A

MODELS 50 AND 50-A



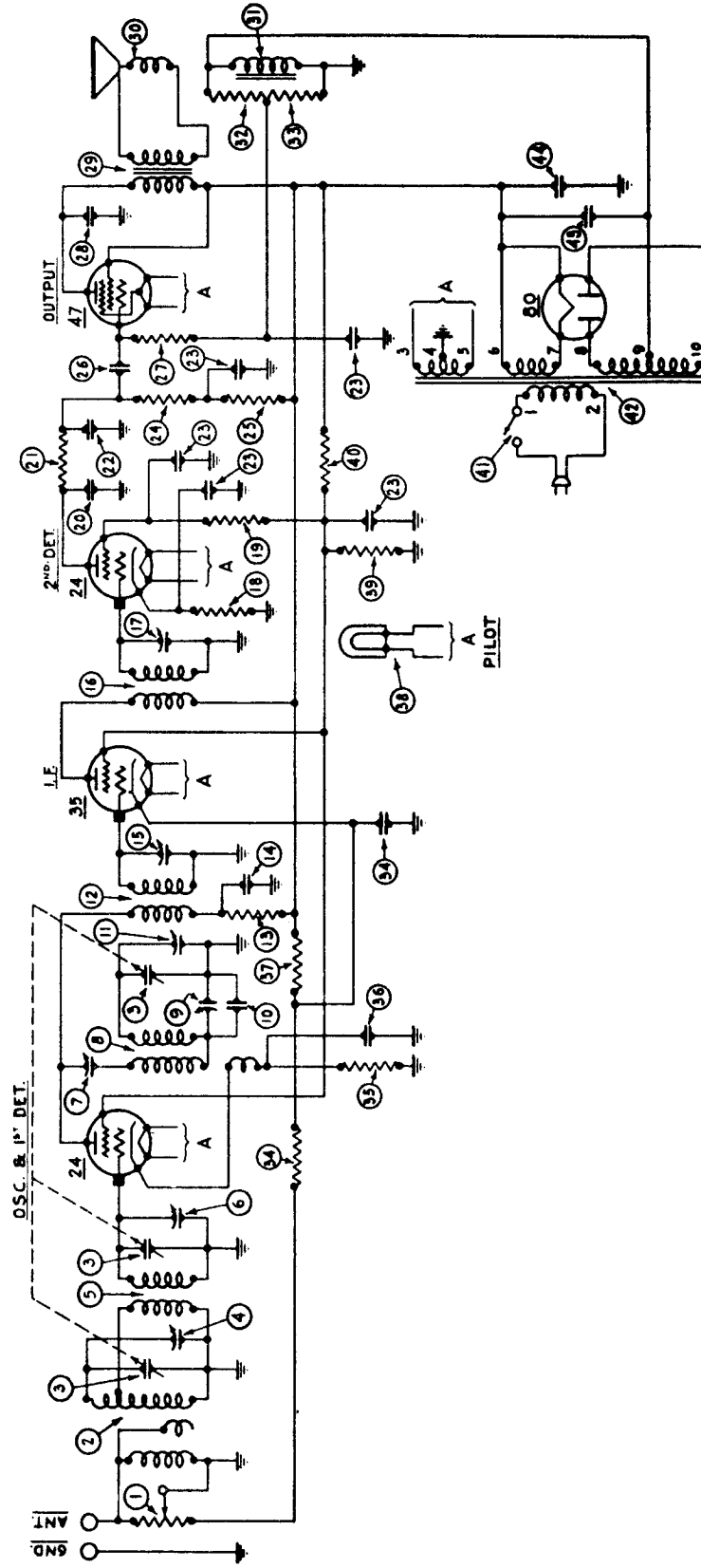
MODELS 50 AND 50-A



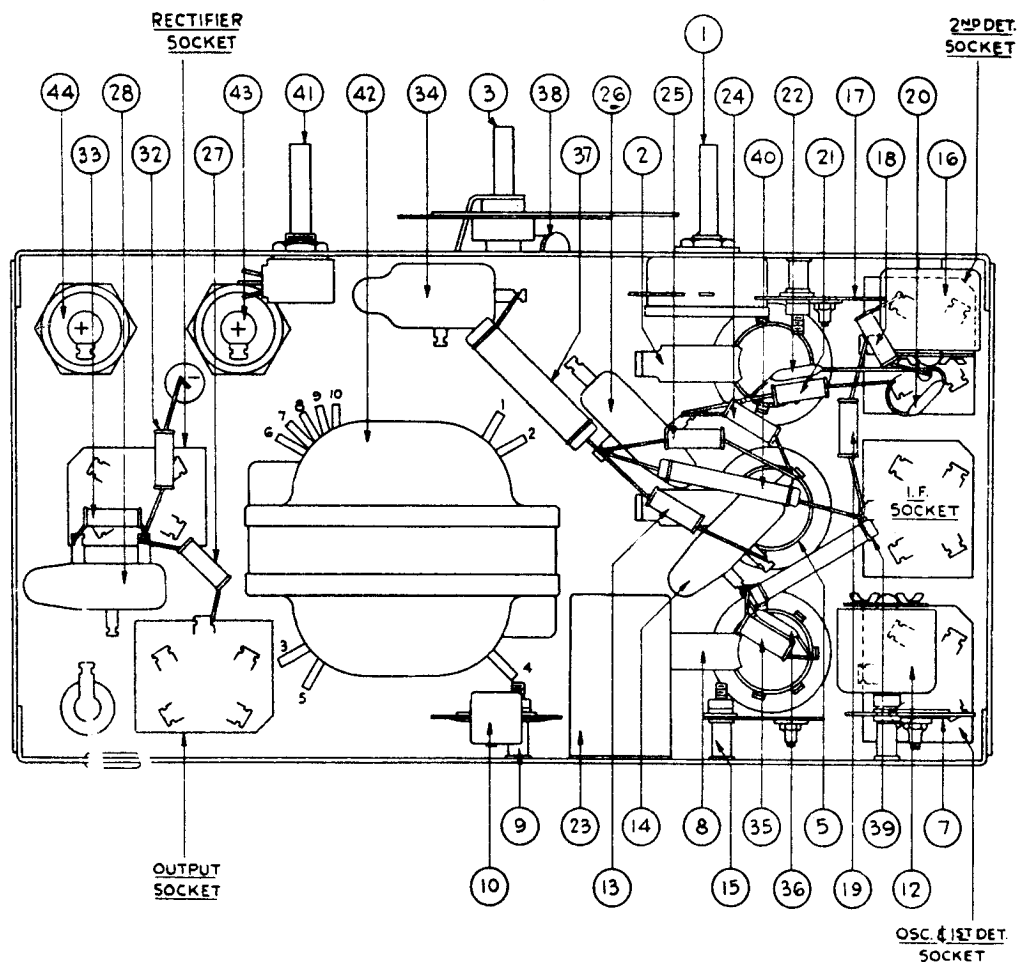
REPLACEMENT PARTS MODELS 50 AND 50-A

①	Volume Control	5232	②	Resistor—15,000 Ohms	5278
②	First R. F. Transformer	03283	②	Bypass Capacitor—.05 Mfd.	3615-L
③	Gang Condenser	03293	②	Bypass Capacitor—(.05 Mfd.)	
④	Compensating Condenser (Part of Gang Condenser Assembly)			(combined with ②)	
⑤	Second R. F. Transformer	03284	②	Resistor—25,000 Ohms	3656
⑥	Compensating Condenser (Part of Gang Condenser Assembly)		②	Resistor—99,000 Ohms	4411
⑦	Third R. F. Transformer	03284	②	Resistor—32,000 Ohms	5279
⑧	Compensating Condenser (Part of Gang Condenser Assembly)		②	Resistor—99,000 Ohms	4411
⑨	Condenser—250 Mmf.	3082	②	On-Off Switch	5382
⑩	Condenser—250 Mmf.	3082	②	Power Transformer—50-60 cycles	5266
⑪	Resistor—10,000 Ohms	4412		Power Transformer—25-40 cycles	5267
⑫	Condenser—.01 Mfd.	3903-L		Power Transformer—50-60 cycles	
⑬	Resistor—240,000 Ohms	4410		210-240 volts	5268
⑭	Resistor—490,000 Ohms	4517	②	Electrolytic Capacitor—6 Mfd.—	
⑮	Bypass Capacitor (.15 Mfd., .25 Mfd., 2-.5 Mfd., 1 Mfd.) 50-60 cycles	03459		50-60 cycles	4916
⑯	Bypass Capacitor (.15 Mfd., .25 Mfd., 2-.5 Mfd., .05 Mfd.) 25-40 Cycles	03455		Electrolytic Capacitor—10 Mfd.	
⑰	Bypass Capacitor—.01 Mfd.	3903-N		25-40 cycles	5142
⑱	Output Transformer	2660	②	Electrolytic Capacitor—6 Mfd.—	
⑲	Voice Coil and Cone Assembly	02970		25-40 cycles and 50-60 cycles	4916
⑳	Speaker Field (Assembled with Pot and Frame)	02942		Tube Shield	03390
㉑	Resistor—490,000 Ohms.	4517		Knob (Large)	03064
㉒	Resistor—160,000 Ohms.	5331		Knob (Small)	03427
㉓	Resistor—150 Ohms and Condenser—.05 Mfd.	3615-X		Spring (For Dial Knobs) Small	4147
				Spring (For Dial Knobs) Large	5282
				Grid Clip	4897
				Five Prong Socket Assembly	4956
				Four Prong Socket Assembly	5026
				Dial Complete	03322
				Bezel	5383

PHILCO MODELS 51 , 51-A AND 52



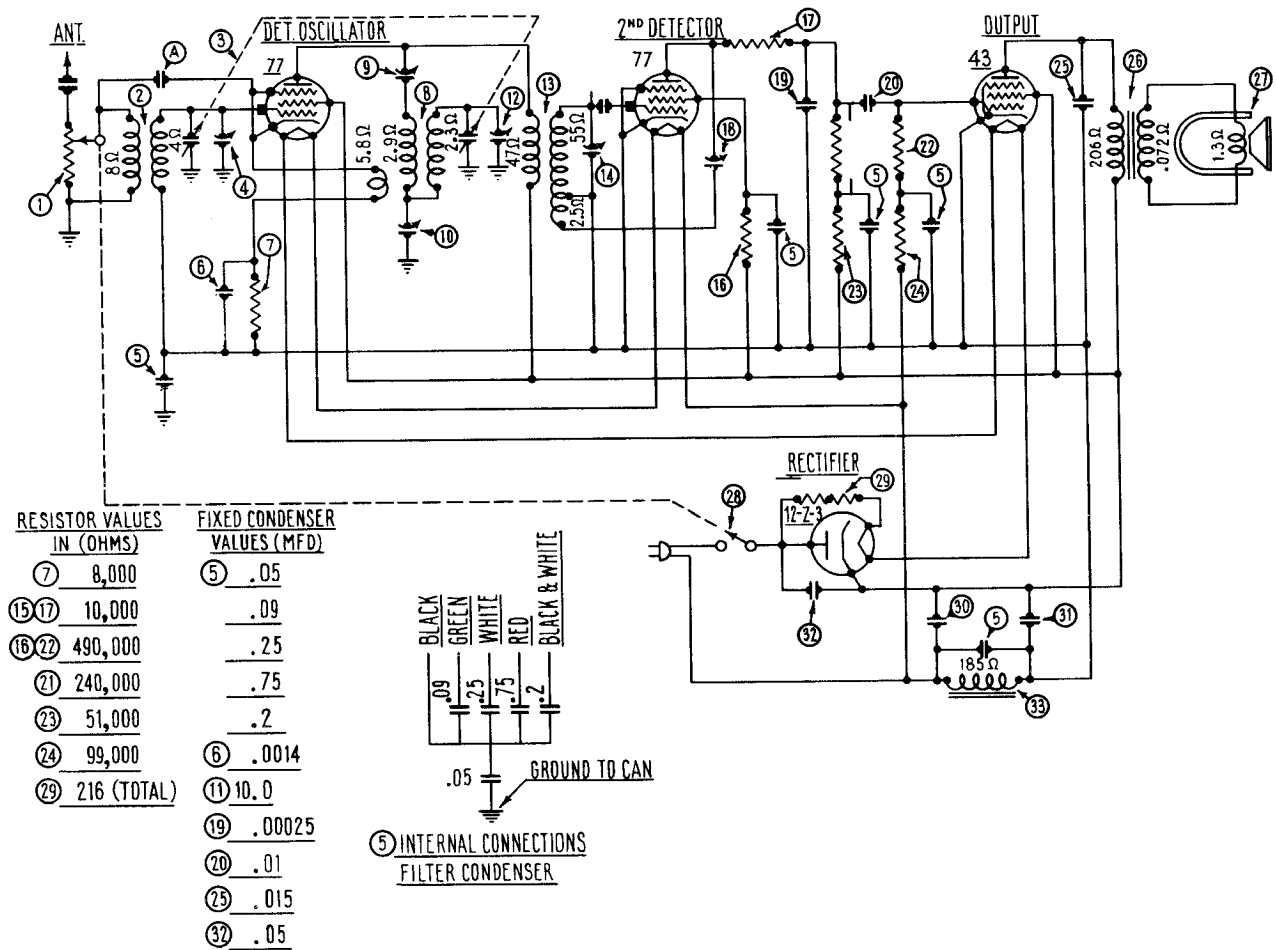
PHILCO MODELS 51, 51-A AND 52



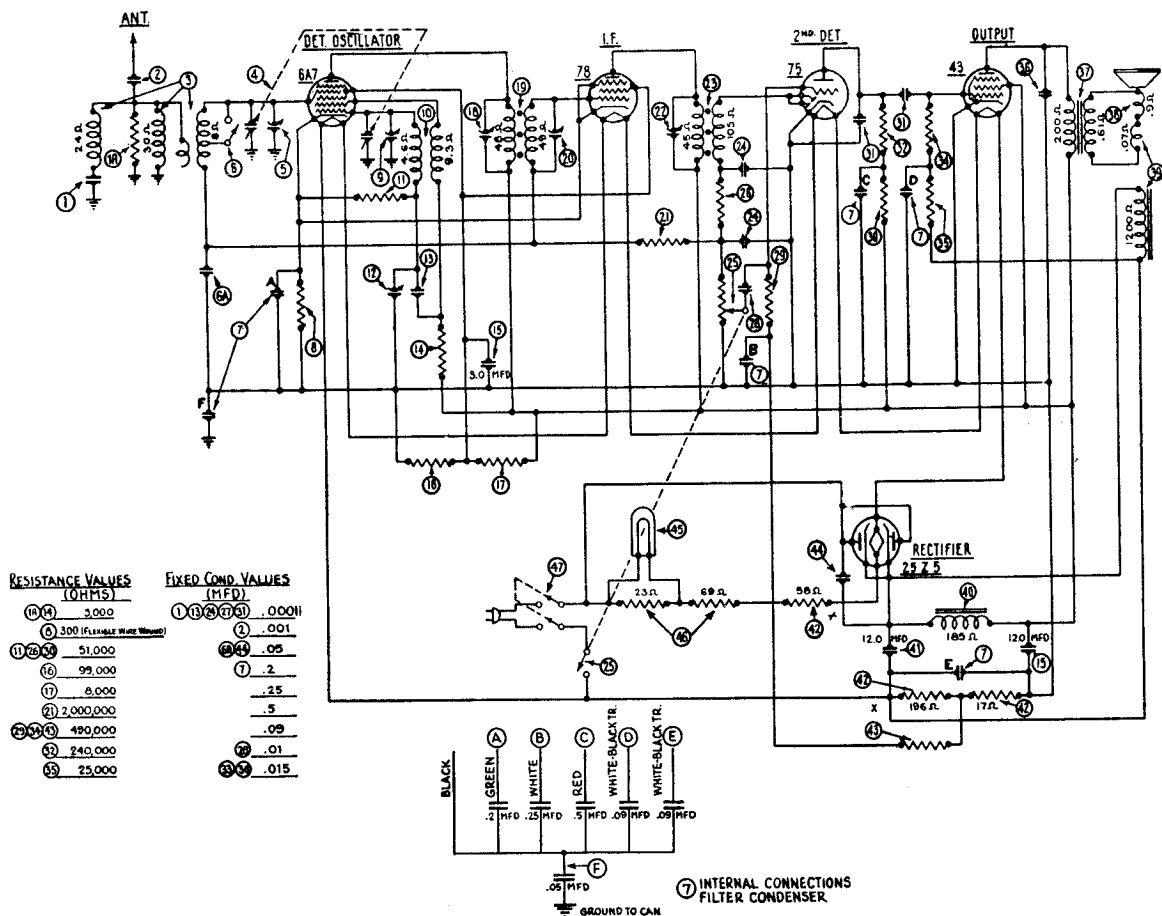
REPLACEMENT PARTS MODELS 51, 51-A and 52

No. on Figs. 1 and 2	Description	Part No.	No. on Figs. 1 and 2	Description	Part No.
①	Volume Control	5839	②⑤	Field Coil and Pot Assembly	02942
②	Antenna Coil	03880	②⑥	Resistor (490,000 ohms)	4517
③	Gang Condenser	03809	②⑦	Resistor (160,000 ohms)	5331
④	Compensating Condenser (Part of gang condenser assembly)		②⑧	Resistor (250 ohms and .05 mfd.)	3615-C
⑤	First R.F. Transformer	03881	②⑨	Resistor (8,000 ohms)	5838
⑥	Compensating Condenser (part of gang condenser assembly)		②⑩	Condenser (710 mmf.)	5863
⑦	Compensating Condenser	04000-A	②⑪	Resistor (51,000 ohms)	5868
⑧	Oscillator Coil	03882	②⑫	Pilot Light	3463
⑨	Compensating Condenser	04000-F	②⑬	Resistor (25,000 ohms)	3656
⑩	Condenser (710 mmf.)	5863	②⑭	Resistor (32,000 ohms)	3525
⑪	Compensating Condenser (part of gang condenser assembly)		②⑮	On-off Switch	5382
⑫	First I. F. Transformer	03887	②⑯	Power Transformer, 50-60 cycles Power Transformer, 25-40 cycles Power Transformer, 50-60 cycles, 230 volts	5266 5267 5268
⑬	Resistor (1,000 ohms)	5837	②⑰	Electrolytic Condenser (6 mfd.) 50-60 cycles	4916
⑭	By-pass Condenser (.05 mfd.)	3615-AC	②⑱	Electrolytic Condenser (10 mfd.) 25-40 cycles	5142
⑮	Compensating Condenser	04000-D	②⑲	Electrolytic Condenser (6 mfd.) By-pass Condenser (across power line) .01 mfd. double, Colonial Clock only	4916 3903-S
⑯	Second I.F. Transformer	03886	②⑳	Clock Unit (60 cycles) Model 551 Clock Glass	5950 5942
⑰	Compensating Condenser	04000-D	②㉑	Tube Shield	04011
⑱	Resistor (33,000 ohms)	5279	②㉒	Knob (Large)	03064
⑲	Resistor (99,000 ohms)	4411	②㉓	Knob (Small)	03437
⑳	Condenser (250 mmf.)	5858	②㉔	Grid Clip	4897
㉑	Resistor (10,000 ohms)	4412	②㉕	Five Prong Socket Assembly	4956
㉒	Condenser (250 mmf.)	5858	②㉖	Four Prong Socket Assembly	5026
㉓	Condenser (.1, .15, .25, 2-.5) 50-60 cycles	03915	②㉗	Pilot Light Bracket Complete	03814
㉔	Condenser (.2, .15, .25, 2-.5) 25-40 cycles	03945	②㉘	Dial Complete	04031
㉕	Resistor (490,000 ohms)	4517	②㉙	Bezel	5879
㉖	Resistor (99,000 ohms)	4411	②㉚	Spring (Large)	5262
㉗	Condenser (.01 mfd.)	3903-N	②㉛	Spring (Small)	4147
㉘	Resistor (490,000 ohms)	4517	②㉜	Scroll (Model 551)	44613
㉙	Condenser (.01 mfd.)	3903-K	②㉝	Turnings (3 used) Model 551	44607
㉚	Output Transformer	2660			
㉛	Voice Coil and Cone Assembly TYPE "S" (Large)	02887			
	TYPE "P" (Small)	02861			

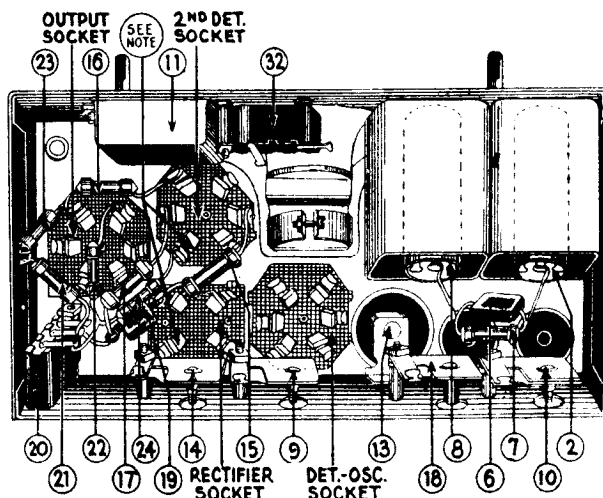
MODEL 53



MODEL 54



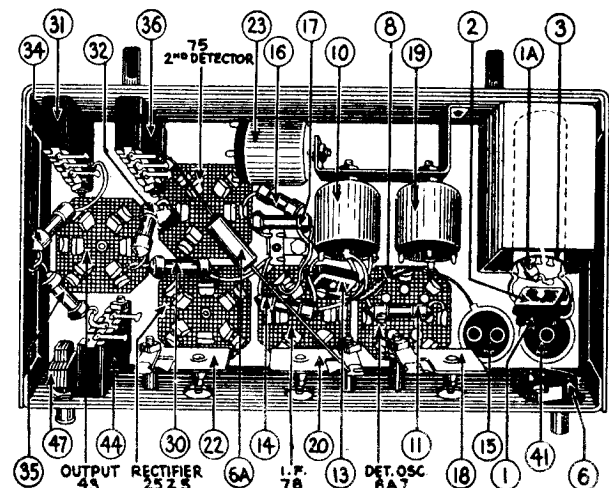
Model 53



Replacement Parts for Model 53

No. on Figs. 2, 3 and 4	Description	Part No.
①	Volume Control	33-5001
②	Antenna Transformer	32-1000
③	Tuning Condenser Assembly	31-1000
④	Compensating Condenser (Part of Tuning Condenser Assembly)	
⑤	Filter Condenser Block (.05-.09-.25-.75-.2 Mfd.)	30-4000
⑥	Condenser (.0014 Mfd.)	7007
⑦	Resistor (8,000 ohms) Gray-Black-Red	5838
⑧	Oscillator Transformer	32-1001
⑨	Compensating Condenser (I.F. Primary)	04000-A
⑩	Compensating Cond. (Low Frequency)	04000-S
⑪	Condenser (10.0 Mfd.)	7440
⑫	Compensating Condenser (Part of Tuning Condenser Assembly)	
⑬	I.F. Transformer	32-1002
⑭	Compensating Cond. (I.F. Secondary)	04000-A
⑮	Resistor (10,000 ohms) Brown-Black-Orange	4412
⑯	Resistor (490,000 ohms) Yellow-White-Yellow	4517
⑰	Resistor (10,000 ohms) Brown-Black-Orange	4412
⑱	Compensating Condenser (Regeneration)	04000
⑲	Condenser (.00025 Mfd.)	3082
⑳	Condenser (.01 Mfd.)	3903-AM
㉑	Resistor (240,000 ohms) Red-Yellow-Yellow	4410
㉒	Resistor (490,000 ohms) Yellow-White-Yellow	4517
㉓	Resistor (51,000 ohms) Green-Brown-Orange	4518
㉔	Resistor (99,000 ohms) White-White-Orange	4411
㉕	Condenser (.015 Mfd.)	3793-S
㉖	Output Transformer	32-7000
㉗	Voice Coil and Cone Assembly	36-3000
㉘	A. C. Switch (Part of Volume Control Assembly)	33-5001
㉙	Resistors (2 Wire Wound-108 ohms each)	33-3000
㉚	Electrolytic Condenser (8 Mfd.)	30-2000
㉛	Electrolytic Condenser (8 Mfd.)	30-2000
㉜	Condenser (.05 Mfd.)	3615-E
㉝	Filter Choke	32-7001
㉞	Tube Shield	7172
㉟	Knobs (Both Controls)	03064
㊱	Four Prong Socket	7544
㊲	Six Prong Socket	7547
㊳	Pointer for Station Selector	28-1019
㊴	Dial	28-1021

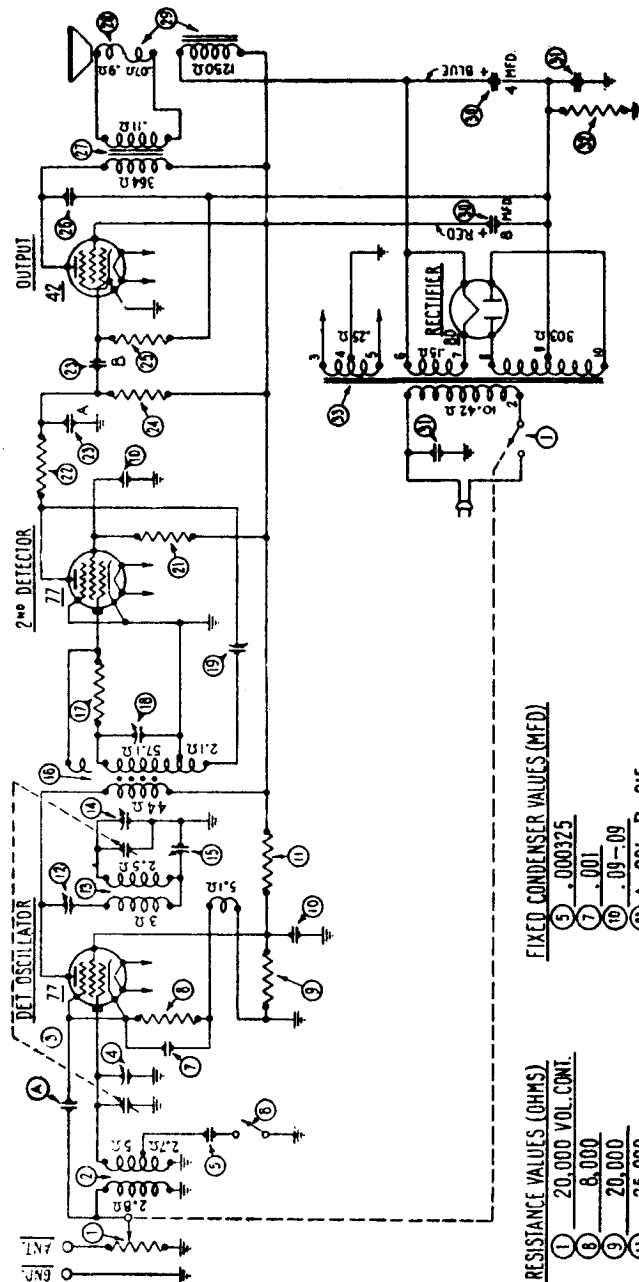
Model 54



Replacement Parts for Model 54

No. on Figs.	Description	Part No.
①	Condenser	30-1005
①a	Resistor (Green-Black-Red)	6096
②	Condenser	5215
③	Antenna Transformer Assembly	32-1117
④	Tuning Condenser Assembly	31-1027
⑤	Compensating Condenser (Part of ④)	
⑥	Wave Band Switch	42-1027
⑥a	Condenser	30-4020
⑦	Filter Condenser (Block)	30-4023
⑧	Resistor (Flexible)	33-3010
⑨	Compensating Condenser (High Frequency 1400) Part of ④	
⑩	Oscillator Coil	32-1118
⑪	Resistor (Green-Brown-Orange)	4518
⑫	Compensating Condenser (Low Freq.)	04000-B
⑬	Condenser	4519
⑭	Resistor (Green-Black-Red)	5310
⑮	Electrolytic Condenser (Double)	30-2002
⑯	Resistor (White-White-Orange)	4411
⑰	Resistor (Gray-Black-Red)	5838
⑱	Compensating Cond. (1st I. F. Primary)	04000-A
⑲	1st I. F. Transformer	32-1115
⑳	Compensating Condenser (1st I. F. Secondary)	04000-A
㉑	Resistor (Red-Black-Green)	5872
㉒	Compensating Cond. (2nd I. F. Primary)	04000-A
㉓	2nd I. F. Transformer	32-1116
㉔	Condenser (Double)	8035-G
㉕	Volume Control and "On-Off" Switch	33-5010
㉖	Resistor (Green-Brown-Orange)	4518
㉗	Condenser	3903-AM
㉘	Resistor (Yellow-White-Yellow)	6097
㉙	Resistor (Green-Brown-Orange)	4518
㉚	Condenser (Double)	8035-F
㉛	Resistor (Red-Yellow-Yellow)	4410
㉜	Resistor (Yellow-White-Yellow)	4517
㉝	Resistor (Red-Green-Orange)	4516
㉞	Condenser	3793-Y
㉟	Output Transformer	32-7020
㊱	Voice Coil and Cone Assembly	36-3029
㊲	Field Coil and Pot Assembly	36-3040
㊳	Filter Choke	32-7036
㊴	Electrolytic Condenser	30-2001
㊵	Resistor (Wire Wound)	33-3012
㊶	Resistor (Yellow-White-Yellow)	6097
㊷	Condenser	3615-B
㊸	Pilot Lamp	4567
㊹	Resistor (Wire Wound)	33-3011
㊺	Safety Switch	42-1026
㊻	Tube Shield	28-1130
㊼	Six Prong Socket	7547
㊽	Seven Prong Socket	27-6005
㊾	Tuning Scale	27-5008
㊿	Volume Control Scale	27-5010

MODEL 57



RESISTANCE VALUES (OHMS)

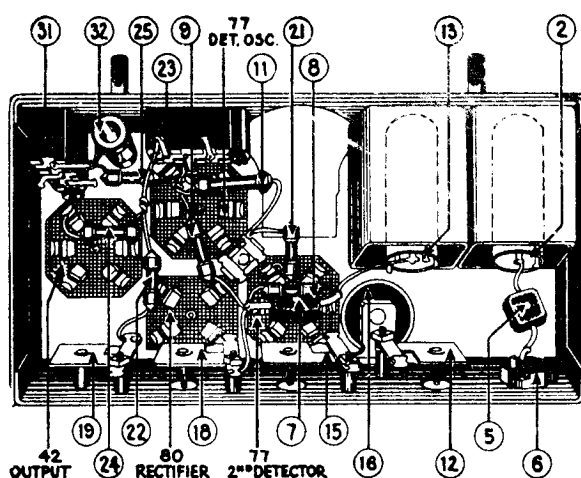
1	20,000 VOL. CONT.
2	8,000
3	20,000
4	25,000
5	4000,000
6	1,000,000
7	10,000
8	240,000
9	490,000
10	325 (WIRE WOUND)

FIXED CONDENSER VALUES (MFD)

1	.000325
2	.001
3	.09-.09
4	A-.001-B-.015
5	.005
6	.015-.015

Note (A)—This capacity obtained by pair twisted wires

Model 57



REPLACEMENT PARTS MODEL 57

No. on Figs.	Description	Part No.	No. on Figs.	Description	Part No.
①	Volume Control and "On-Off" Switch....	33-5011	⑮	Compensating Cond. (I. F. Secondary)...	04000-13
②	Antenna Transformer.....	32-1153	⑯	Compensating Condenser.....	04000
③	Tuning Condenser Assembly.....	31-1035	⑰	Resistor (Brown-Black-Green).....	4409
④	Compensating Condenser (Antenna; Part of ③).....		⑱	Resistor (Brown-Black-Orange).....	4412
⑤	Condenser.....	30-1004	⑳	Condenser (Double).....	7762-B
⑥	Wave Band Switch.....	42-1027	㉑	Resistor (Red-Yellow-Yellow).....	4410
⑦	Condenser.....	5215	㉒	Resistor (Yellow-White-Yellow).....	3769
⑧	Resistor (Gray-Black-Red).....	5838	㉓	Condenser.....	7625-E
⑨	Resistor (Red-Black-Orange).....	6650	㉔	Output Transformer.....	32-7044
⑩	Condenser (Double).....	4989-C	㉕	Voice Coil and Cone Assembly.....	36-3029
⑪	Resistor (Red-Green-Orange).....	3656	㉖	Field Coil and Pot Assembly.....	36-3081
⑫	Compensating Condenser (I. F. Primary).....	04000-A	㉗	Electrolytic Condenser (Double).....	30-2004
⑬	Oscillator Coil.....	32-1023	㉘	Condenser (Double).....	3793-R
⑭	Compensating Cond. (High Frequency—1400 kilocycles) (Part of ③).....		㉙	Resistor (Wire Wound).....	7465
⑰	Compensating Cond. (Low Frequency).....	04000-S	㉚	Power Transformer.....	32-7046
⑱	I. F. Transformer.....	32-1155		Tube Shield.....	28-1107
⑲	Resistor (Yellow-Black-Green).....	6010		Four Prong Socket.....	7544
				Six Prong Socket.....	7547

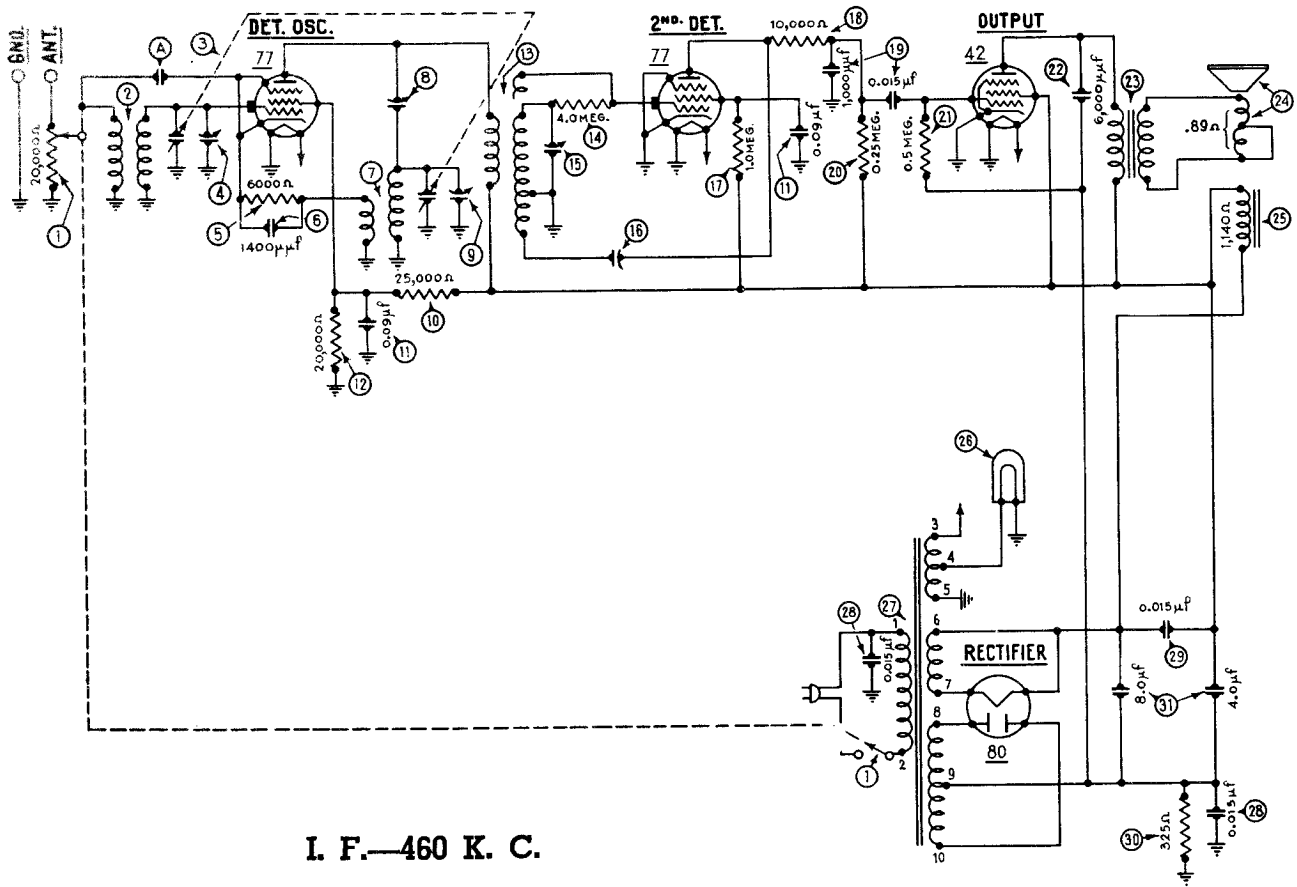
Model 58

The following parts used in Model 58 are different, otherwise replacement parts are the same as Model 57.

Item	Part No. (Model 58)
Tuning Condenser.....	31-1089
Electrolytic filter condenser.....	30-2013
Wave-band switch.....	42-1043
Volume Control.....	33-5057
Dial scale.....	27-5023
Pilot light shield.....	29-1126

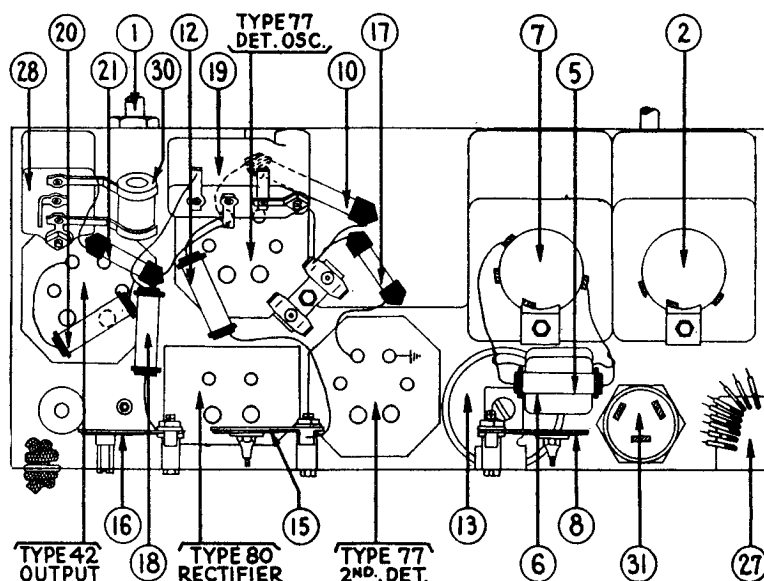
Also part No. 3569 (1-watt resistor—490,000 ohms) used in Model 57, is replaced by part No. 4517 (½ watt, 490,000 ohms) in Model 58.

MODEL 59



1. F.—460 K. C.

MODEL 59

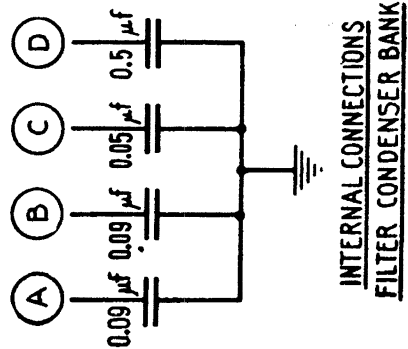


Replacement Parts—Model 59

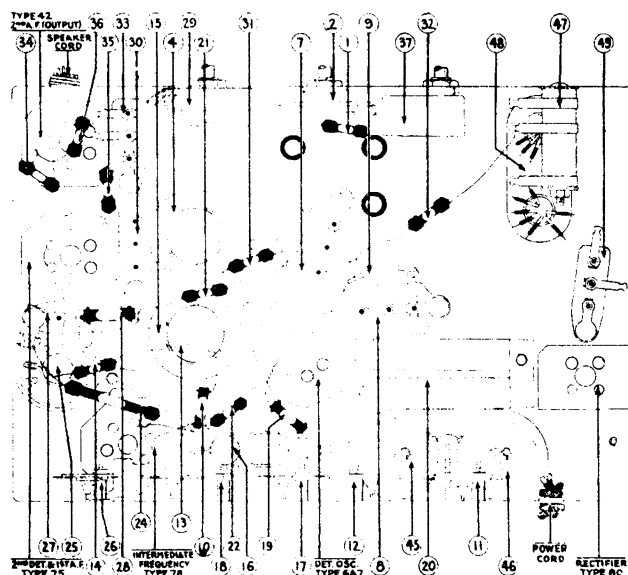
No. on Diagram	Item	Part No.
①	Volume Control and On-Off Switch.....	33-5067
②	Antenna Transformer.....	32-1388
③*	Tuning Condenser Assembly.....	31-1190
④*	Compensating Condenser—Ant.....	Part of ③
⑤	Resistor (6,000 ohms—Blue-Black-Red).....	7352
⑥	Condenser (.0014 Mfd.—Mica).....	7007
⑦	Oscillator Transformer.....	32-1389
⑧	Compensating Condenser (I. F. Primary).....	04000-A
⑨*	Compensating Condenser (Osc. H. F.).....	Part of ③
⑩	Resistor (25,000 ohms—Red-Green-Orange).....	3656
⑪*	Condenser (.09 twin—Black Bakelite).....	4989-C
⑫	Resistor (20,000 ohms—Red-Black-Orange).....	6650
⑬	I. F. Transformer.....	32-1155
⑭*	Resistor (4 Megohms—Yellow-Black-Green).....	6010
⑮	Compensating Condenser (I. F. Secondary).....	04000-D
⑯	Compensating Condenser (Regeneration).....	04000
⑰	Resistor (1 Megohm—Brown-Black-Green).....	33-1096
⑱	Resistor (10,000 ohms—Brown-Black-Orange).....	33-1000
⑲	Condenser (.015-.0001 Mfd. Block type).....	7762-B
⑳	Resistor (250,000 ohms—Red-Yellow-Yellow).....	33-1097
㉑	Resistor (500,000 ohms—Yellow-White-Yellow).....	6097
㉒*	Condenser (.006 Mfd. Block type).....	7625-E
㉓*	Output Transformer.....	32-7041
㉔*	Voice Coil and Cone Assembly.....	36-3029
㉕*	Field Coil and Pot Assembly.....	36-3081
㉖*	Pilot Lamp.....	6608
㉗	Power Transformer.....	32-7064
㉘	Condenser (.015 Mfd. Twin).....	3793-R
㉙	Condenser (.015 Mfd.).....	See Note A below
㉚	Resistor (Wire wound 325 ohms).....	7465
㉛	Condenser (Electrolytic 8.0—4.0 Mfd.).....	30-2013
	Tube Shield.....	28-1107
	Four Prong Tube Socket.....	7544
	Six Prong Tube Socket.....	7547
	A. C. Cord and Plug.....	L-943A
	Dial Scale.....	27-5023

* Does not show in Fig. at right.

Note A: Condenser ⑳ not used in production.

[illegible]

MODEL 60

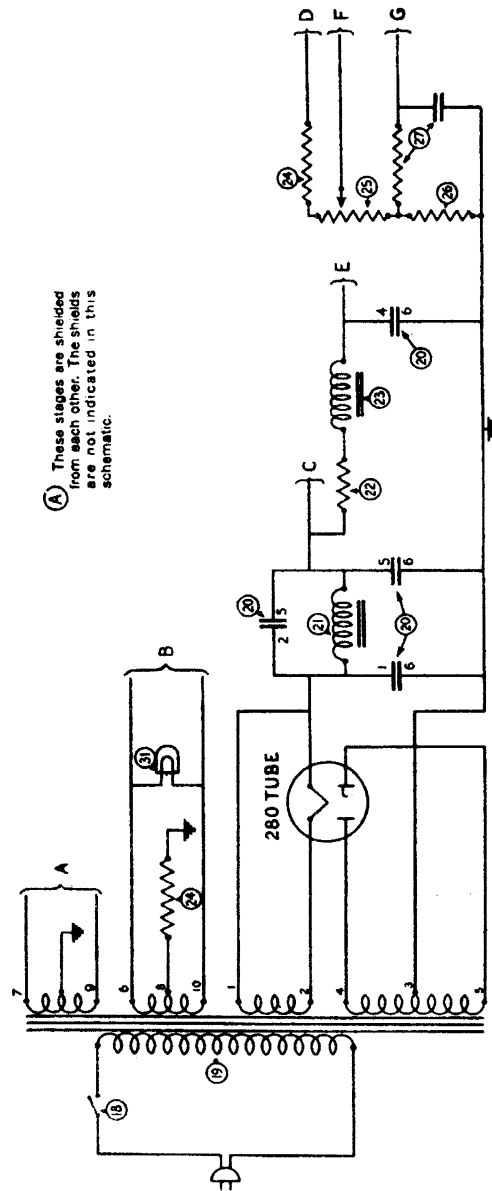
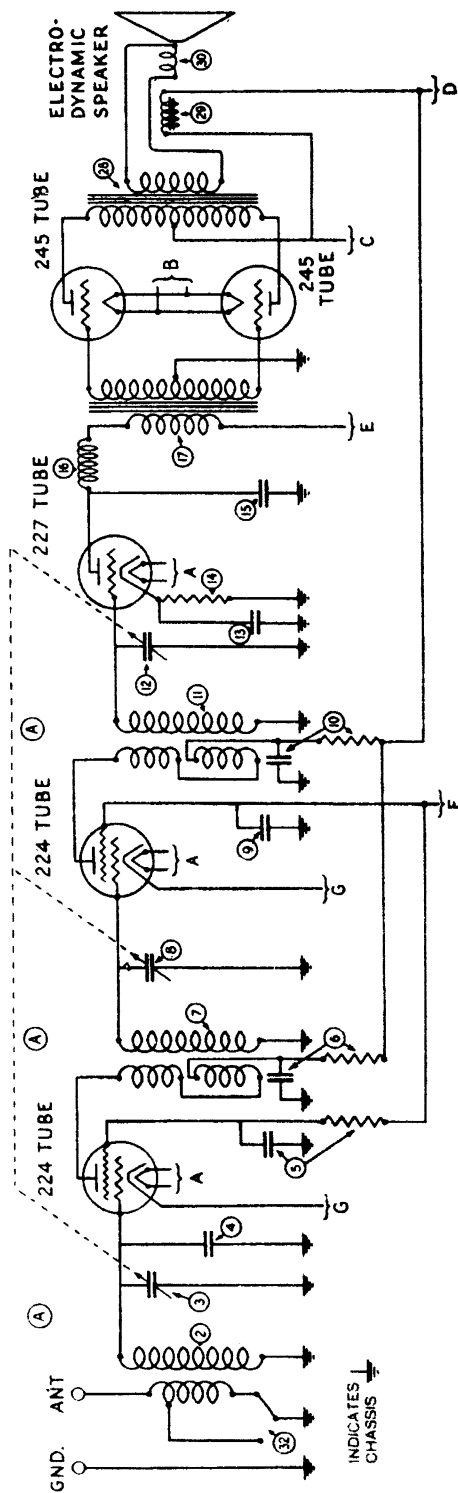


REPLACEMENT PARTS FOR MODEL 60

No. on Figs.	Description	Part No.
①	Resistor (10,000) (Brown-Black-Orange)	4412
②	Wave-Band Switch	42-1001
③	Tuning Condenser Assembly	31-1006
④	Antenna Transformer	32-1047
⑤	Compensating Condenser (Ant.; H. F.; Part of ③)	
⑥	Compensating Condenser (Osc.; H. F.; Part of ③)	
⑦	Condenser (Double) (.05-.05)	3615-AJ
⑧	Condenser (.18)	4989-Z
⑨	Resistor (Flexible Wire-Wound) (200) (Red-Black-Brown)	7217
⑩	Resistor (51,000) (Green-Brown-Orange)	4518
⑪	Compensating Condenser (Osc.; L. F.; Police Band)	04000-S
⑫	Compensating Condenser (Osc.; L. F.; Broadcast Band)	04000-S
⑬	Condenser (.00011)	4519
⑭	Resistor (32,000) (Orange-Red-Orange)	5279
⑮	Oscillator Transformer	32-1048
⑯	First I. F. Transformer	32-1049
⑰	Compensating Cond. (1st I. F. Primary)	04000-M
⑱	Compensating Cond. (1st I. F. Secondary)	04000-A
⑲	Resistor (51,000) (Green-Brown-Orange)	4518
⑳	Filter Condenser Bank	30-4013
㉑	Resistor (2 meg.) (Red-Black-Green)	5872
㉒	Resistor (10,000) (Brown-Black-Orange)	4412
㉓	Pilot Lamp (Station Selector)	6608

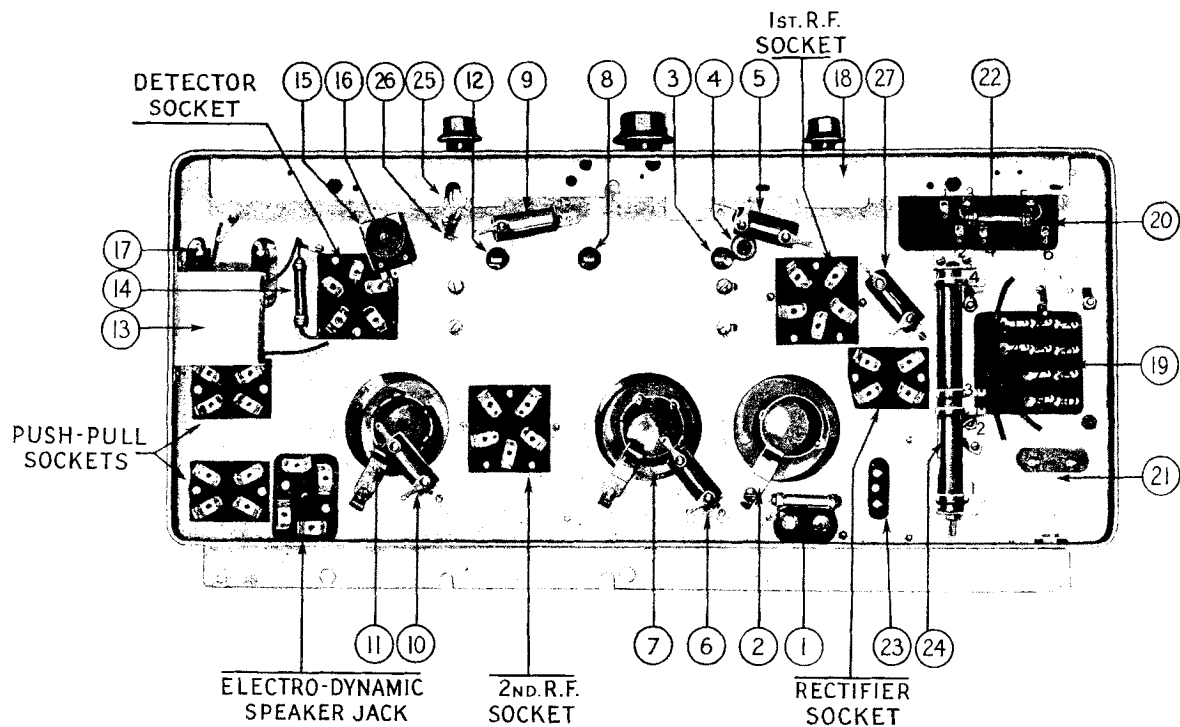
No. on Figs.	Description	Part No.
㉔	Resistor (25,000) (Red-Green-Orange)	3656
㉕	Second I. F. Transformer	32-1050
㉖	Compensating Cond. (2nd, I. F. Primary)	04000-M
㉗	Condenser (Double) (.00011-.00011)	8035-B
㉘	Resistor (51,000) (Green-Brown-Orange)	4518
㉙	Volume Control and "On-Off" Switch	33-5006
㉚	Condenser (.01)	3903-AP
㉛	Resistor (1.0 meg.) (Brown-Black-Green)	4409
㉜	Resistor (.1 meg.) (White-White-Orange)	4411
㉝	Condenser (Double) (.00011-.015)	8035-D
㉞	Resistor (70,000) (Violet-Black-Orange)	5385
㉟	Resistor (.5 meg.) (Yellow-White-Yellow)	4517
㊱	Resistor (70,000) (Violet-Black-Orange)	5385
㊲	Tone Control	30-4008
㊳	Condenser (Part of ㉟) — (.015)	
㊴	Condenser (Part of ㉟) — (.01)	
㊵	Output Transformer	32-7019
㊶	Voice Coil and Cone Assembly	36-3014
㊷	Speaker Field, assembled with Pot (S-7)	36-3037
㊸	Condenser (Electrolytic) (8.0)	7558
㊹	Condenser (Electrolytic) (8.0)	7558
㊺	Resistor (Wire-Wound)	7998
㊻	Power Transformer (50-60 —)	8046
㊼	Condenser (.015)	3793-W
㊽	Tube Shield	28-1107
㊾	Four-Prong Tube Socket	7544
㊿	Six-Prong Tube Socket	7547
	Seven-Prong Tube Socket	27-6005

Philco Model 65



(A) These stages are shielded from each other. The shields are not indicated in this schematic.

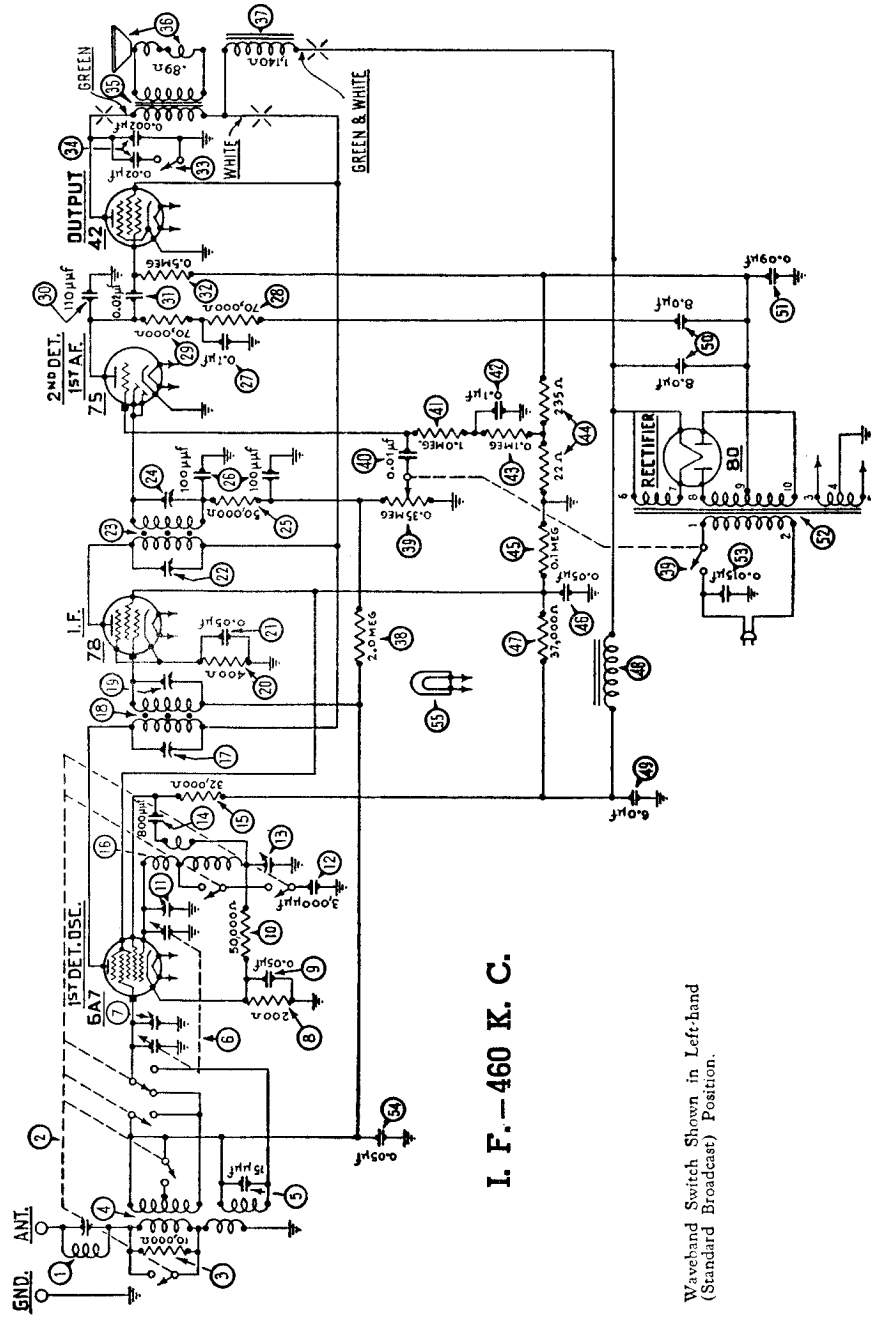
Philco Model 65



Replacement Parts for Model 65

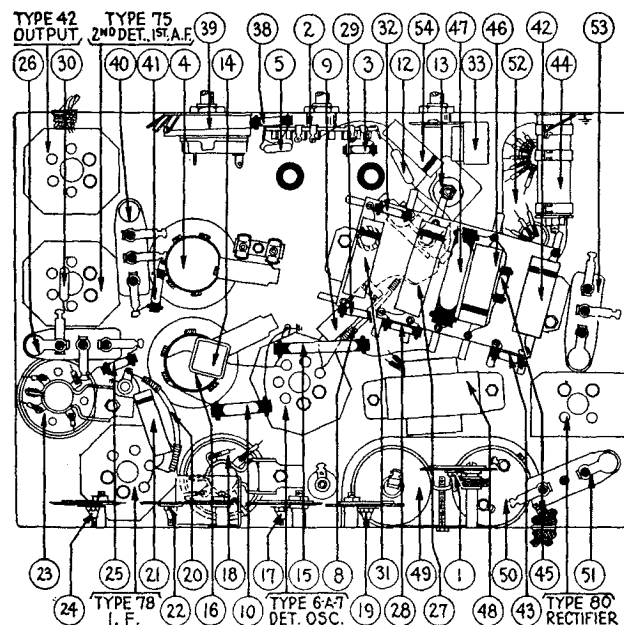
NUMBER	DESCRIPTION	PART No.			
①	Antenna Resistor	3524	②⑤	Volume Control	3528
②	R. F. Transformer (Antenna Coil)	3506-B	②⑥	Six-Ohm Resistor	3628
- ③ - ⑩	Tuning Condenser	3480-B	②⑦	Cathode By-Pass Condenser and Resistance	3292-B
④	Fixed Compensator	3617-A	②⑧	Push-Pull Output Transformer	2848
⑤	Screen Grid By-Pass Condenser and Resistance	3292-A	②⑨	Speaker Field Winding	2850
⑥ - ⑩	Plate By-Pass Condenser and Resistance	3584-A	③①	Voice Coil and Cone	2844-A
⑦ - ⑪	R. F. Transformer	3506-A	③②	Pilot Lamp	3463
⑧	Screen Grid By-Pass Condenser	3292-P		Knob (Small)	3579
⑬	Detector Cathode By-Pass Condenser	3583		Knob (Large)	3580
⑭	Detector Cathode Resistor	3525		Knob Spring	3305
⑮	.001 Detector Plate By-Pass Condenser	3081		Four Hole Socket Assembly	3423-A
⑯	R. F. Choke	3256-A		Five Hole Socket Assembly	3442-A
⑰	Push-Pull Input Transformer	3537		Speaker Plug Socket Assembly	3464-A
⑱	Set Power Switch	3517		Pilot Lamp Socket Assembly	3556-A
⑲	Power Transformer	3516		A.C. Attachment Cord and Plug	L-543-A
⑳	B Filter Condenser Block	3515		Speaker Plug and Cable	L-1056-A
㉑	First Filter Choke	3422		Rubber Washer	3558
㉒	Detector Plate Resistor	3526		Rubber Foot (Set)	3184
㉓	Second Filter Choke	3518		Rubber Foot (Speaker)	2967
㉔	BC Resistor	3512		Socket Wrench for Speaker Mounting Bolts	3312

MODEL 66



I. F. - 460 K. C.

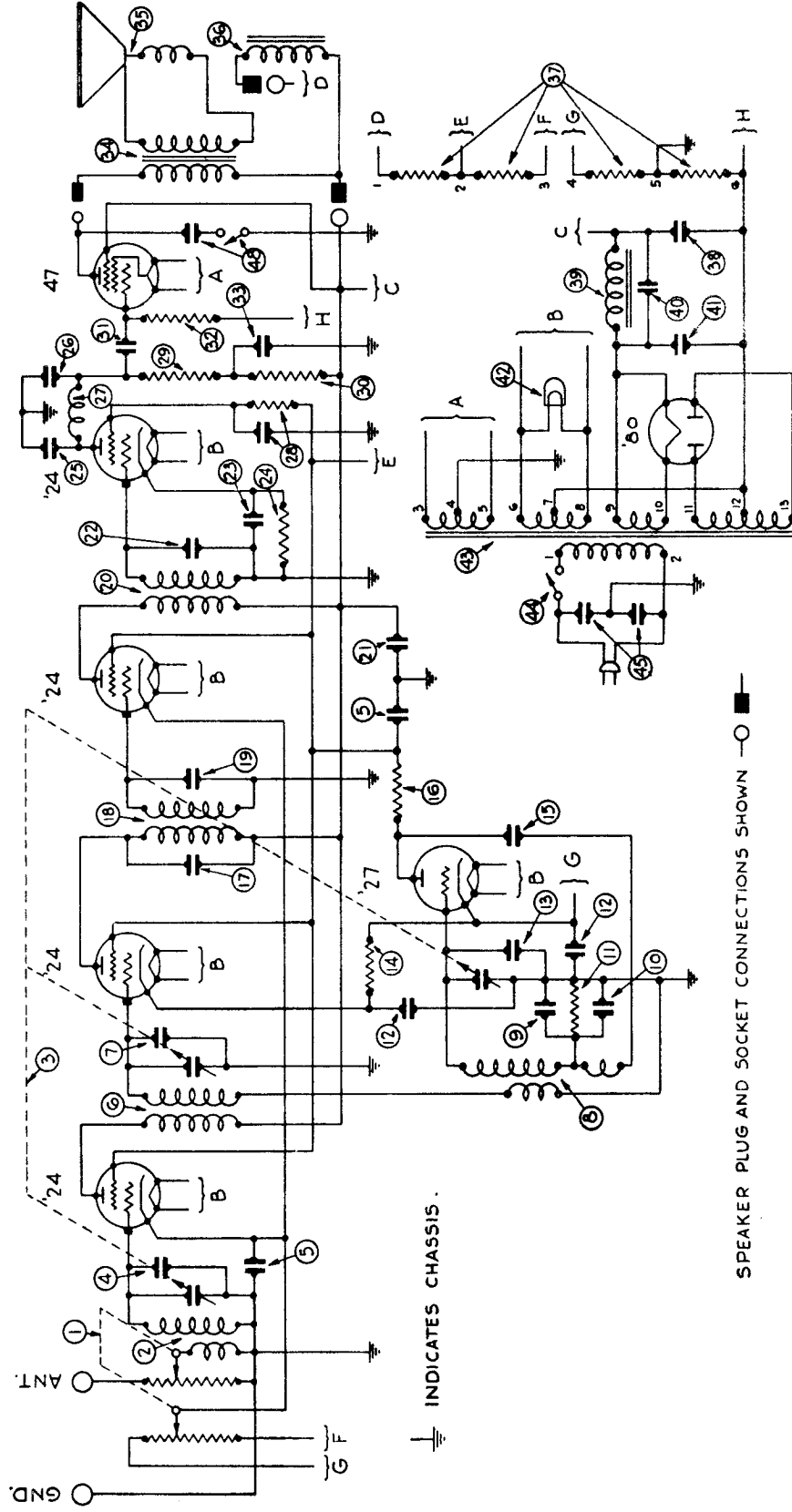
Waveband Switch Shown in Left-hand
(Standard Broadcast) Position.



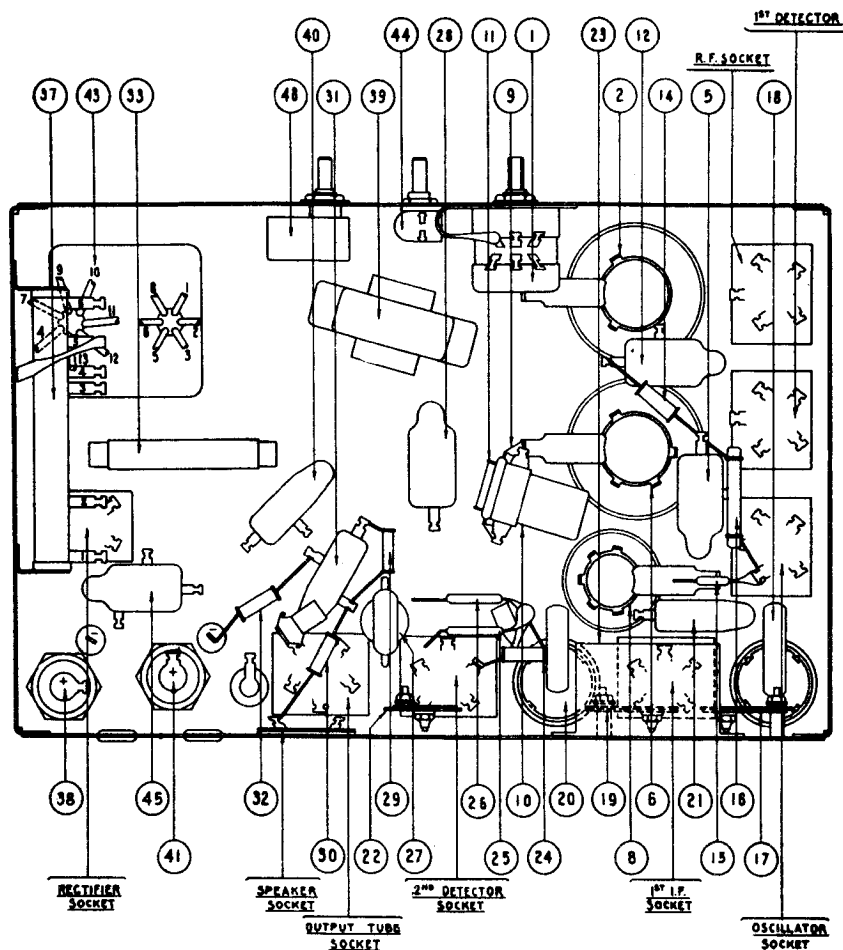
Replacement Parts for Model 66

No. on Figs.	Description	Part No.	No. on Figs.	Description	Part No.
①	Wave Trap.....	38-5199	③⑤	Output Transformer.....	32-7019
②	Wave-band Switch.....	42-1066	③⑥	Voice Coil & Cone Assembly (S-12).....	36-3014
③	Resistor (10,000 ohms) (Brown-Black-Orange).....	33-1000	③⑦	Field Coil and Pot. Assembly (S-12).....	36-3341
④	Antenna Transformer.....	32-1412	③⑧	Resistor (2 Megohms) (Red-Black-Green).....	33-1025
⑤	Condenser (.000015 Mfd.).....	30-1030	③⑨	Volume Control and On-Off Switch.....	33-5006
⑥	Tuning Condenser Assembly.....	31-1231	④①	Condenser (.01 Mfd.) (Bakelite Block).....	3903-AB
⑦	Compensating Condenser (ANT).....	Part of ⑥	④②	Resistor (1 Megohm) (Brown-Black-Green).....	33-1096
⑧	Resistor (200 ohms Flexible) (Red-Black-Brown).....	7217	④③	Condenser (.1 Mfd.).....	30-4122
⑨	Condenser (.05 Mfd. Tubular).....	30-4020	④④	Resistor (.1 Meg.) (White-White-Orange).....	6099
⑩	Resistor (50,000 ohms) (Green-Green-Orange).....	6098		Resistor (B. C. Wire-wound) (22, 235 ohms).....	33-3037
⑪	Compensating Condenser (OSC. HF).....	Part of ⑥	④⑤	Resistor (.1 Meg.) (White-White-Orange).....	6099
⑫	Condenser (.003 Mfd. Mica).....	30-1022	④⑥	Condenser (.05 Mfd. Tubular).....	30-4123
⑬	Compensating Condenser (Osc. I. F.).....	04000-S	④⑦	Resistor (37,000 ohms) (Orange-Violet-Orange).....	33-1098
⑭	Condenser (.0008 Mfd. Mica).....	5878	④⑧	Filter Choke.....	32-7018
⑮	Resistor (32,000 ohms) (Orange-Red-Orange).....	5279	④⑨	Condenser (Electrolytic—6 Mfd.).....	30-2021
⑯	Oscillator Transformer.....	32-1413	⑤①	Condenser (Electrolytic—8-8 Mfd.).....	30-2028
⑰	Compensating Condenser (1st I. F. Pri.).....	04000M	⑤②	Condenser (.09 Mfd. Bakelite Block).....	4989-D
⑱	1st I. F. Transformer.....	32-1414	⑤③	Power Transformer.....	8046
⑲	Compensating Condenser (1st I. F. Secondary).....	04000M	⑤④	Condenser (.015 Mfd. Bakelite Block).....	3793-W
⑳	Resistor (400 ohms Flexible).....	33-3016	⑤⑤	Condenser (.05 Mfd. Tubular).....	30-4020
㉑	Condenser (.05 Mfd. Tubular).....	30-4020	⑤⑥	Dial Light.....	6608
㉒	Compensating Condenser (2d I. F. Primary).....	04000M		Four Prong Socket.....	7544
㉓	2d I. F. Transformer.....	32-1415		Six Prong Socket.....	7547
㉔	Compensating Condenser (2d I. F. Secondary).....	04000J		Seven Prong Socket.....	27-6005
㉕	Resistor (50,000 ohms) (Green-Brown-Orange).....	6098		Tube Shield.....	28-1107
㉖	Condenser (.0001 Mfd. Twin Bakelite Block).....	8035-B		Chassis Mounting Screw.....	W-567
㉗	Condenser (.1 Mfd. Tubular).....	30-4170		Chassis Mounting Washer (Metal).....	W-315
㉘	Resistor (70,000 ohms) (Violet-Black-Orange).....	33-1115		Chassis Mounting Washer (Rubber).....	5189
㉙	Resistor (70,000 ohms) (Violet-Black-Orange).....	33-1115		Knob (Large).....	27-4051
㉚	Condenser (.00011 Mfd. Mica).....	30-1006		Knob (Small).....	27-4052
㉛	Condenser (.02 Mfd. Tubular).....	30-4113		Dial Assembly.....	31-1234
㉜	Resistor (500,000 ohms) (Yellow-White-Yellow).....	6097		Dial Scale.....	27-5057
㉝	Tone Control.....	30-4192		A. C. Cord and Plug Assembly.....	L-943A
㉞	Condensers in Tone Control.....	Inside ③③			

MODELS 70 AND 70-A



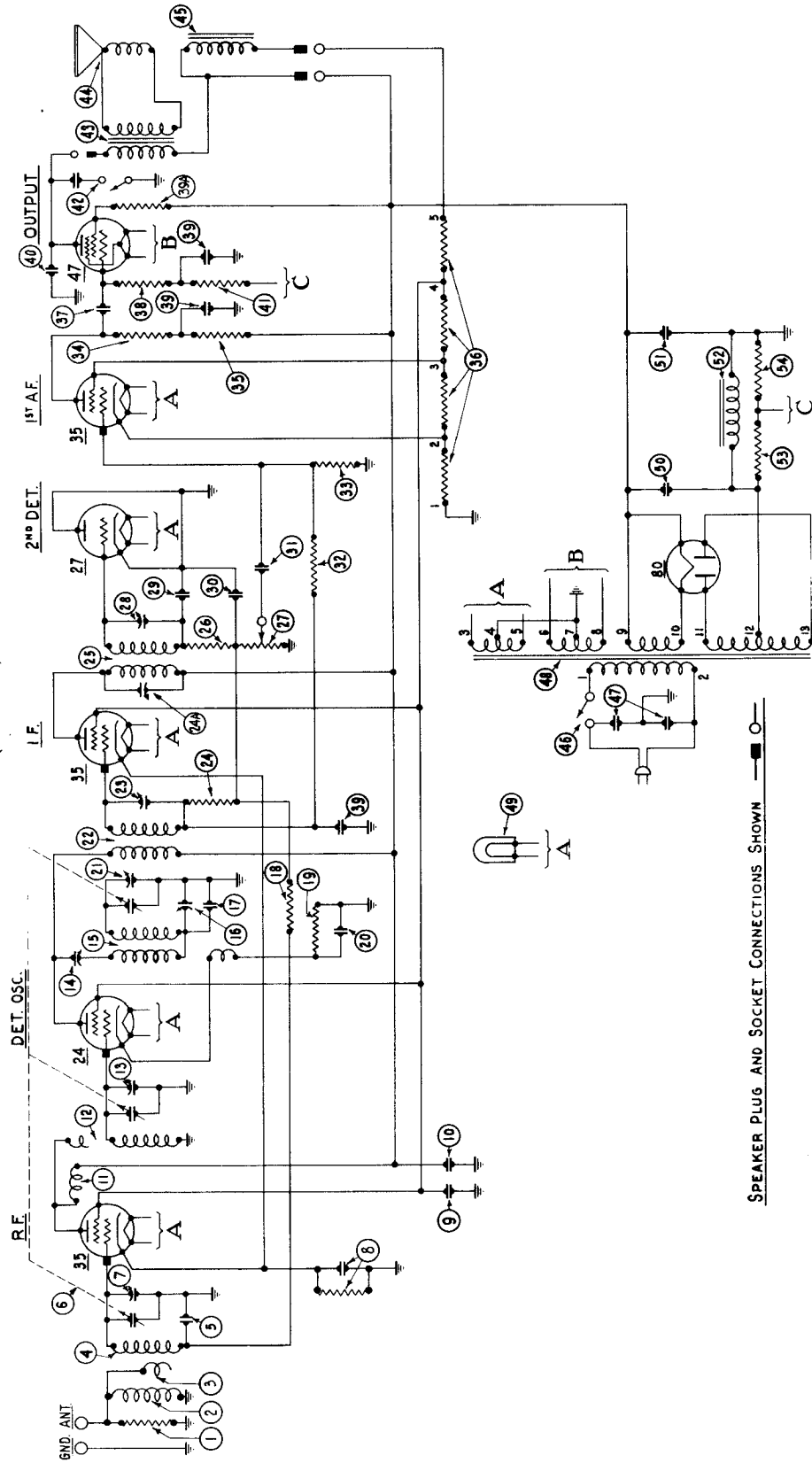
MODELS 70 AND 70-A



REPLACEMENT PARTS—MODELS 70 AND 70-A

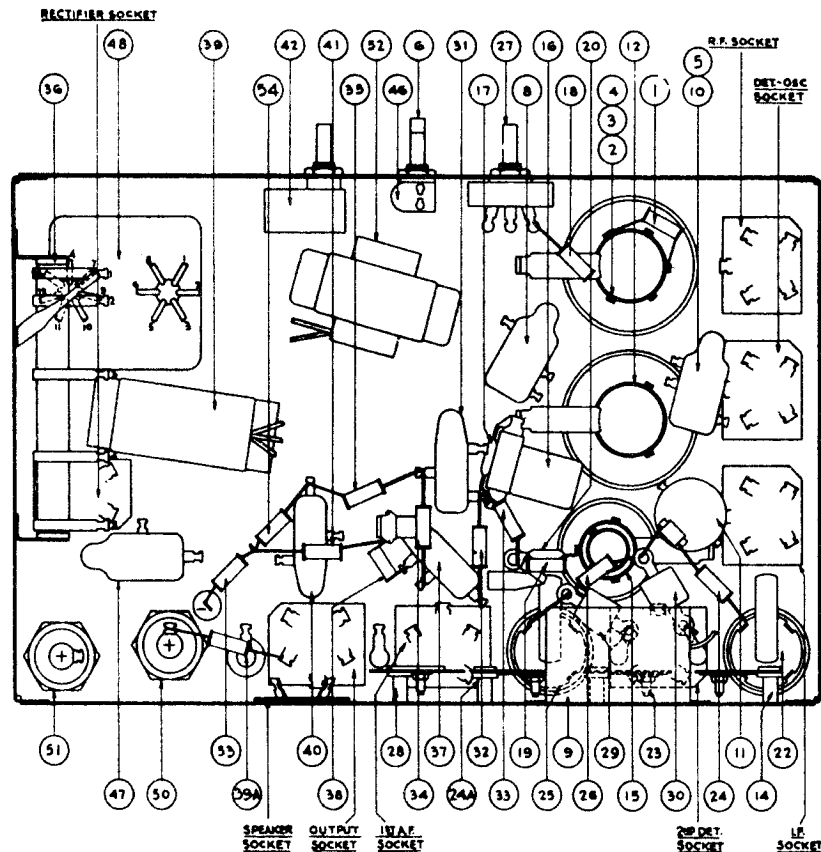
No. on Figs. 3 and 4	Description	Part No.	No. on Figs. 3 and 4	Description	Part No.
①	Volume Control	5039	③	Condenser (.01 mfd.)	3903-L
②	R. F. Transformer	03082	④	Resistor (240,000 ohms)	4410
③	Tuning Condenser (50-60 cycles)	03076	⑤	Condenser (.25 mfd.)	4204
④	Tuning Condenser (25-40 cycles)	03077	⑥	Output Transformer	2673
⑤	Compensating Condenser — Antenna—(Part of Gang Con- denser Assembly)		⑦	Voice Coil and Cone Assembly	02996
⑥	Condenser (.09 mfd. Double)	4989-C	⑧	Field Coil (Assembled with Pot)	02966
⑦	Detector Transformer	03083	⑨	B. C. Resistor	03079
⑧	Compensating Condenser — Detector—(Part of Gang Con- denser Assembly)		⑩	Electrolytic Condenser (6 mfd.) 50-60 cycles	4916
⑨	Oscillator Coil	03084	⑪	Electrolytic Condenser (10 mfd.) 25-40 cycles	5142
⑩	Condenser (410 mmf.)	5120	⑫	Choke	4819
⑪	Compensating Condenser—Low Frequency	04000-F	⑬	Condenser (.09 mfd.) 50-60 cycles	4989-J
⑫	Resistor (51,000 ohms)	4518	⑭	Condenser (.18 mfd.) 25-40 cycles	4989-K
⑬	Condenser (.09 mfd. Double)	4989-C	⑮	Electrolytic Condenser (6 mfd.) 50-60 cycles	4916
⑭	Compensating Condenser—High Frequency — (Part of Gang Condenser Assembly)		⑯	Electrolytic Condenser (10 mfd.) 25-40 cycles	5142
⑮	Resistor (5,000 ohms)	5310	⑰	Pilot Light	3463
⑯	Condenser (110 mmf.)	4519	⑱	Power Transformer (50-60 cycles)	5117
⑰	Resistor (13,000 ohms)	3766	⑲	Power Transformer (25-40 cycles)	5118
⑱	Compensating Condenser—1st I. F. Primary	04000-J	⑳	Power Transformer (50-60 cycles, 230 volts)	5119
⑲	First I. F. Transformer	03091	㉑	"On-Off" Switch	4095
⑳	Compensating Condenser—1st I. F. Secondary	04000-H	㉒	Condenser (.015 mfd. Double)	3793-K
㉑	Second I. F. Transformer	03092	㉓	Tube Shield	03987
㉒	Condenser (.05 mfd.)	3615-L	㉔	Bezel	5312
㉓	Compensating Condenser—2nd I. F. Secondary	04000-K	㉕	Knob (Large)	03064
㉔	Condenser (.5 mfd.)	3583	㉖	Knob (Small)	03437
㉕	Resistor (51,000 ohms)	4518	㉗	Spring (Small)	4147
㉖	Condenser (500 mmf.)	3910	㉘	Spring (Large)	5262
㉗	Condenser (250 mmf.)	3082	㉙	Grid Clip	4897
㉘	R. F. Choke	03086	㉚	Five Prong Socket Assembly	4956
㉙	Condenser (.09 Combined with 250 ohm Resistor)	4989-E	㉛	Four Prong Socket Assembly	4955
㉚	Resistor (240,000 ohms)	4410	㉜	Dial Complete	03031
㉛	Resistor (45,000 ohms) 50-60 cycles	5256			
㉜	Resistor (99,000 ohms) 25-40 cycles	4411			

MODELS 70 AND 70-A (A. V. C.)



SPEAKER PLUG AND SOCKET CONNECTIONS SHOWN — O —

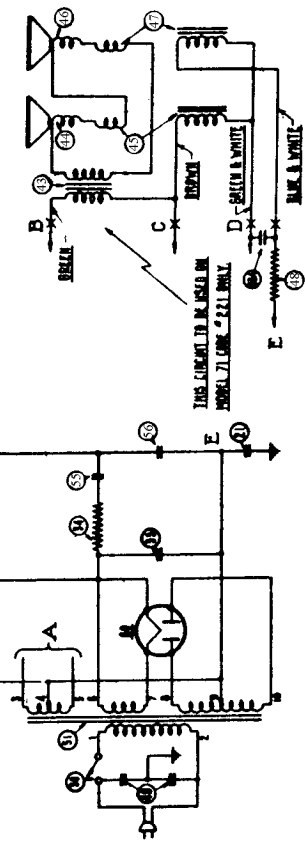
MODELS 70 AND 70-A



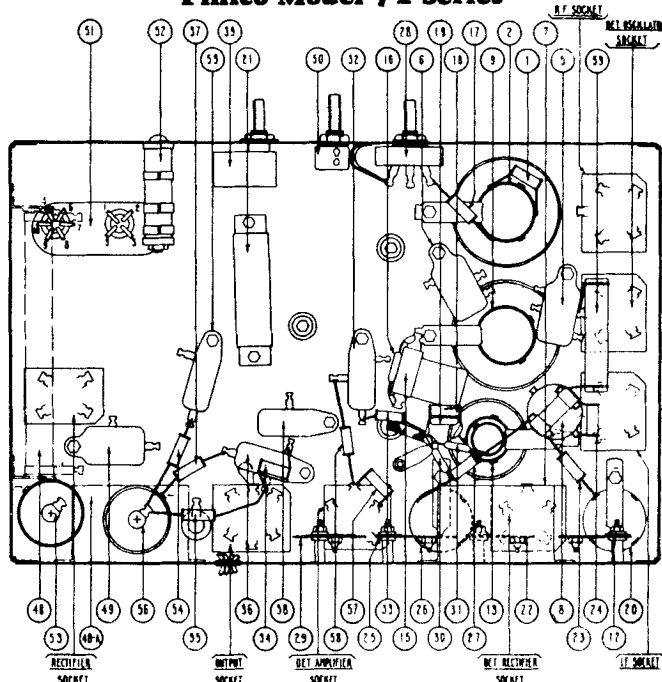
REPLACEMENT PARTS MODELS 70 AND 70-A

(Above Serial No. B-22,000)

No. on Figs. 3 and 4	Description	Part No.	No. on Figs. 3 and 4	Description	Part No.
①	Resistor (10,000 ohms)	4112	⑤⑥	B. C. Resistor	04196
②			⑦	Condenser (.01 mfd.)	3903-T
③	Antenna Coil	04339	⑧	Resistor (490,000 ohms)	4517
④			⑨	Filter Condenser Block (.05, .25, 1.5 mfd.)	04194
⑤	Condenser (.05 mfd.) double	3615-AF	⑩A	Resistor (3,000 ohms)	5309
⑥	Tuning Condenser Assembly 50-60 cycles	04164	⑪	Condenser (.01 mfd.)	3903-U
⑦	Tuning Condenser Assembly 25-40 cycles	04165	⑫	Resistor (330,000 ohms) 50-60 cycles	6046
⑧	Compensating Condenser — Antenna — (Part of Tuning Condenser Assembly)		⑬	Resistor (490,000 ohms) 25-40 cycles	4517
⑨	Condenser (.09 mfd. and 200 ohm Resistor)	4889-L	⑭	Tone Control	03637
⑩	Condenser (.5 mfd.)	3583	⑮	Output Transformer	2673
⑪	Combined with ⑩		⑯	Voice Coil & Cone Assembly	02996
⑫	R. F. Choke	04198	⑰	Field Coil Assembled with Pot	02906
⑬	Interstage Coil	04185	⑱	On-Off Switch	4095
⑭	Compensating Condenser — Detector — (Part of Tuning Condenser Assembly)		⑲	Condenser (.015 mfd. Double)	3793-H
⑮	Compensating Condenser—Coupling	04000-M	⑳	Power Transformer (50-60 cycles)	5117
⑯	Oscillator Coil	04186	㉑	Power Transformer (25-40 cycles)	5118
⑰	Compensating Condenser — Low Fre- quency	04000-F	㉒	Power Transformer (50-60 cycles, 230 volts)	5119
⑱	Condenser (410 mmf.)	5120	㉓	Pilot Light	3463
⑲	Resistor (2,000,000 ohms)	5872	㉔	Electrolytic Condenser (8 mfd.) 50-60 cycles	4916
⑲	Resistor (10,000 ohms)	4412	㉕	Electrolytic Condenser (14 mfd.) 25-40 cycles	5725
⑲	Condenser (700 mmf.)	4520	㉖	Electrolytic Condenser (6 mfd.) 50-60 cycles	4916
㉑	Compensating Condenser — High Fre- quency—(part of Tuning Condenser Assembly)		㉗	Electrolytic Condenser (10 mfd.) 25-40 cycles	5142
㉒	First I. F. Transformer	04190	㉘	Filter Choke	4819
㉓	Compensating Condenser—First I. F.	04000-M	㉙	Resistor (51,000 ohms)	4518
㉔	Resistor (2,000,000 ohms)	5872	㉚	Resistor (490,000 ohms)	4517
㉔A	Compensating Condenser 2nd I. F. Primary	04000-M	㉛	Tube Shield	04168
㉕	Second I. F. Transformer	03038	㉜	Knob (Large)	03064
㉖	Resistor (99,000 ohms)	4411	㉝	Knob (Small)	03437
㉗	Volume Control	6015	㉞	Knob Spring	4147
㉘	Compensating Condenser—Second I. F.	04000-M	㉟	Grid Clip	4897
㉙	Condenser (110 mmf.)	4519	㊱	Five Prong Socket Assembly	4956
㉙	Condenser (110 mmf.)	4519	㊲	Four Prong Socket Assembly	4955
㉙	Condenser (.01 mfd.)	3903-G	㊳	Dial Complete	03031
㉙	Resistor (4,000,000 ohms)	6010	㊴	Base	5312
㉙	Resistor (1,000,000 ohms)	4409	㊵	Chassis Mounting Screw	W-468
㉙	Resistor (70,000 ohms)	5385	㊶	Mounting Washer	W-315
㉙	Resistor (25,000 ohms)	4516	㊷	Rubber Washer	5189



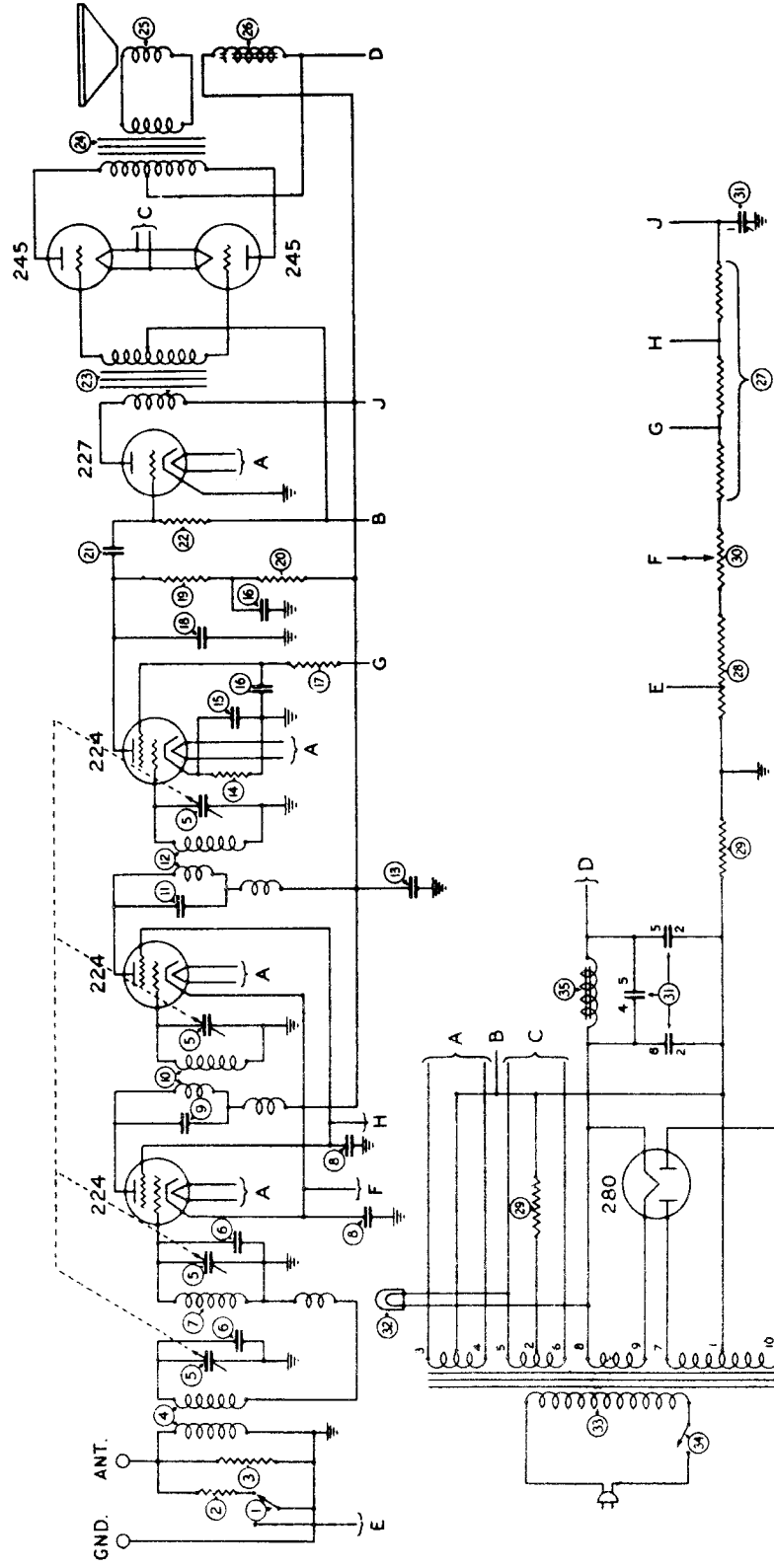
Philco Model 71 Series



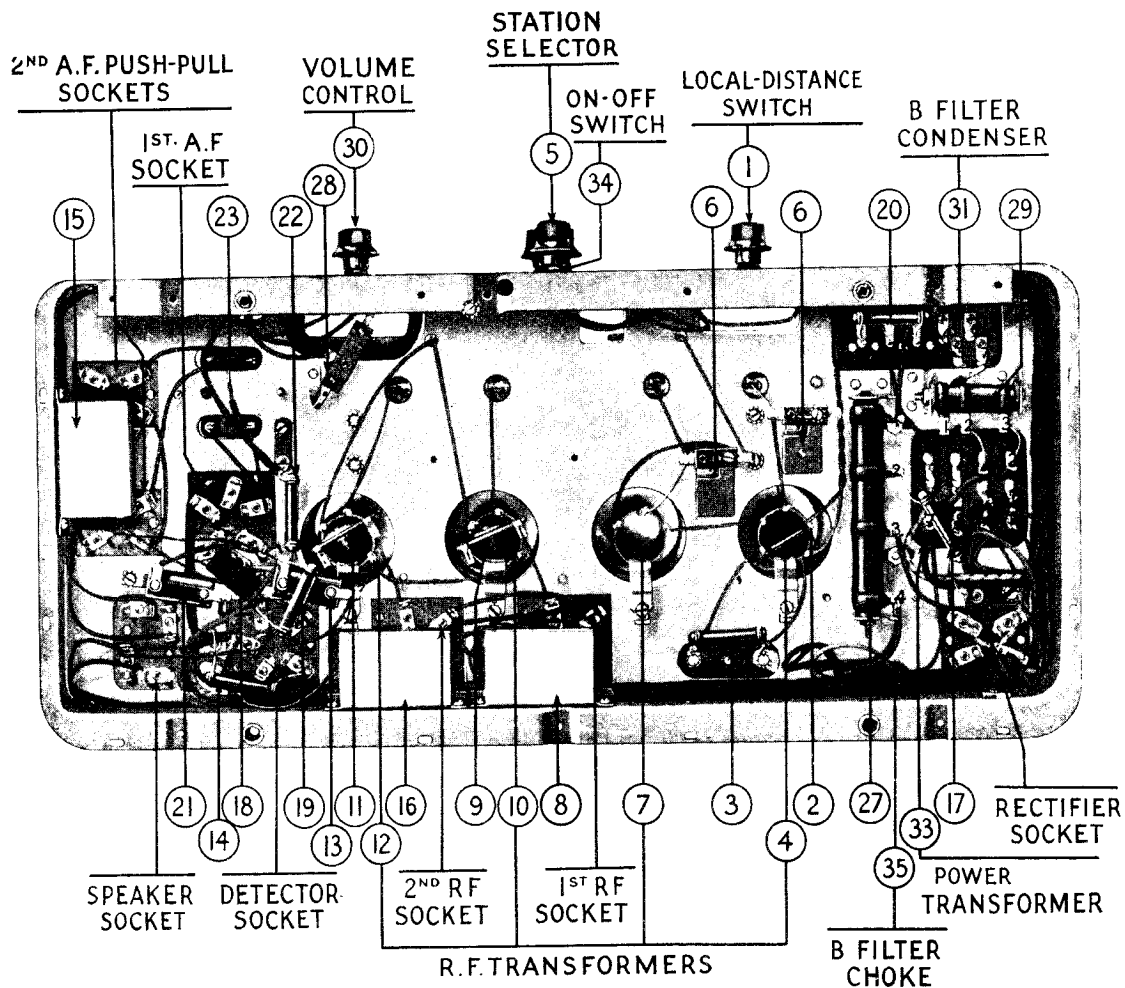
Replacement Parts for Model 71 Series

① Resistor (10,000 ohms)	4412	④② Speaker Field and Bucking Coil assembled with pot—(K-7) single speaker models	02761
② R. F. Transformer	04339	④③ Output Transformer — Twin speaker models	2564
③ Tuning Condenser (50-60 cycles)	04733	④④ Voice Coil and cone assembly	02823
④ Tuning Condenser (25-40 cycles)	04734	④⑤ Speaker Field and Bucking Coil assembled with pot—(K-10) Twin speaker models	02767
⑤ Condenser (.05 Mfd. double)	3615-AF	④⑥ Voice coil and cone assembly	02823
⑥ Condenser (.09 Mfd. and 200 ohm resistor)	4989-L	④⑦ Speaker field assembled with pot —(K-9) Twin speaker models	02762
⑦ Condenser (.5 Mfd.)	3583	④⑧ Resistor (5620 ohms) wire wound —Twin speaker models	6451
⑧ R. F. Choke	04198	④⑨A Condenser (.25 Mfd.) Twin Speaker Models	04997
⑨ Detector Transformer	04185	④⑩ Condenser (.015 Mfd. Double)	3793-H
⑩ Compensating Condenser—De- tector—Part of tuning con- denser assembly		④⑪ On-off Switch	6498
⑪ Pilot Light	6608	④⑫ Power Transformer—50-60 cy- cles—single speaker	6454
⑫ Compensating Condenser — 1st I. F. primary	04000-M	④⑬ Power Transformer—25-40 cy- cles—single speaker	6455
⑬ Oscillator Coil	04186	④⑭ Power Transformer—50-60 cy- cles—230 volts—single speaker	6456
⑭ Compensating Condenser—High frequency—Part of tuning condenser assembly		④⑮ Power Transformer—50-60 cy- cles—twin speaker	6457
⑮ Compensating condenser—Low frequency	04000-F	④⑯ Power Transformer—25-40 cy- cles—twin speaker	6458
⑯ Condenser (410 Mmf.) (Yellow and Orange)	5120	④⑰ Power Transformer—50-60 cy- cles—230 volts—twin speaker	6459
⑰ Resistor (1,000,000 ohms)	4409	④⑱ Resistor—wire wound (245 ohms and 185 ohms)	6452
⑱ Resistor (15,000 ohms)	6208	④⑲ Electrolytic Condenser (8 Mfd.) (50-60 cycles) single speaker	6453
⑲ Condenser (700 Mmf.) (White and Yellow)	4520	④⑳ 8 Mfd. Twin speaker	6707
⑳ First I. F. Transformer	04190	④㉑ Resistor (10,000 ohms)	4412
㉑ Filter Condenser Bank (2 —.05, .25 Mfd.)	04731	④㉒ Condenser (.05 Mfd.)	3615-G
㉒ Compensating Condenser — 1st I. F. secondary	04000-M	④㉓ Electrolytic Condenser (6 Mfd.) (50-60 cycles) single speaker	4916
㉓ Resistor (1,000,000 ohms)	4409	④㉔ 8 Mfd. Twin speaker	6706
㉔ Resistor (1,000 ohms)	5837	④㉕ Resistor (5,000 ohms)	5310
㉕ Compensating Condenser—2nd I. F. primary	04000-M	④㉖ Resistor (5,000 ohms)	5310
㉖ Second I. F. Transformer	04319	④㉗ Resistor (13,000 ohms)	6450
㉗ Resistor (99,000 ohms)	4411	④㉘ Tube Shield (small)	5387
㉘ Volume Control	6499	④㉙ Tube Shield (large)	04735
㉙ Compensating Condenser—2nd I. F. secondary	04000-M	④㉚ Knob (large)	03063
㉚ Condenser (110 Mmf.) (Blue and Golden Yellow)	4519	④㉛ Knob (medium)	03064
㉛ Condenser (110 Mmf.) (Blue and Golden Yellow)	4519	④㉜ Knob (small)	03437
㉜ Condenser (.01 Mfd.)	3903-J	④㉝ Knob Spring (large)	5262
㉝ Resistor (1,000,000 ohms)	4409	④㉞ Knob Spring (small)	4147
㉞ Resistor (70,000 ohms)	5385	④㉟ Grid Clip	4897
㉟ Resistor (25,000 ohms) Single Speaker	4516	⑤ Four Prong Socket Assembly	5026
Resistor (51,000 ohms) Twin Speaker Models	4518	⑤ Five Prong Socket Assembly	4956
㉟ Condenser (.01 Mfd.)	3903-N	⑤ Six Prong Socket Assembly	6417
㉟ Resistor (490,000 ohms)	4517	⑤ Dial Complete	03031
㉟ Condenser (.01 Mfd.)	3903-AA	⑤ Bezel	6435
㉟ Tone Control	04757	⑤ Chassis Mounting Screw	W-468
④① Output Transformer — single speaker models	2580	⑤ Mounting Washer	W-315
④② Voice Coil and Cone assembly	02823	⑤ Rubber Washer	5189
		⑤ Mounting Clamp	6440
		⑤ Cone Retaining Ring	2600

Philco Model 76



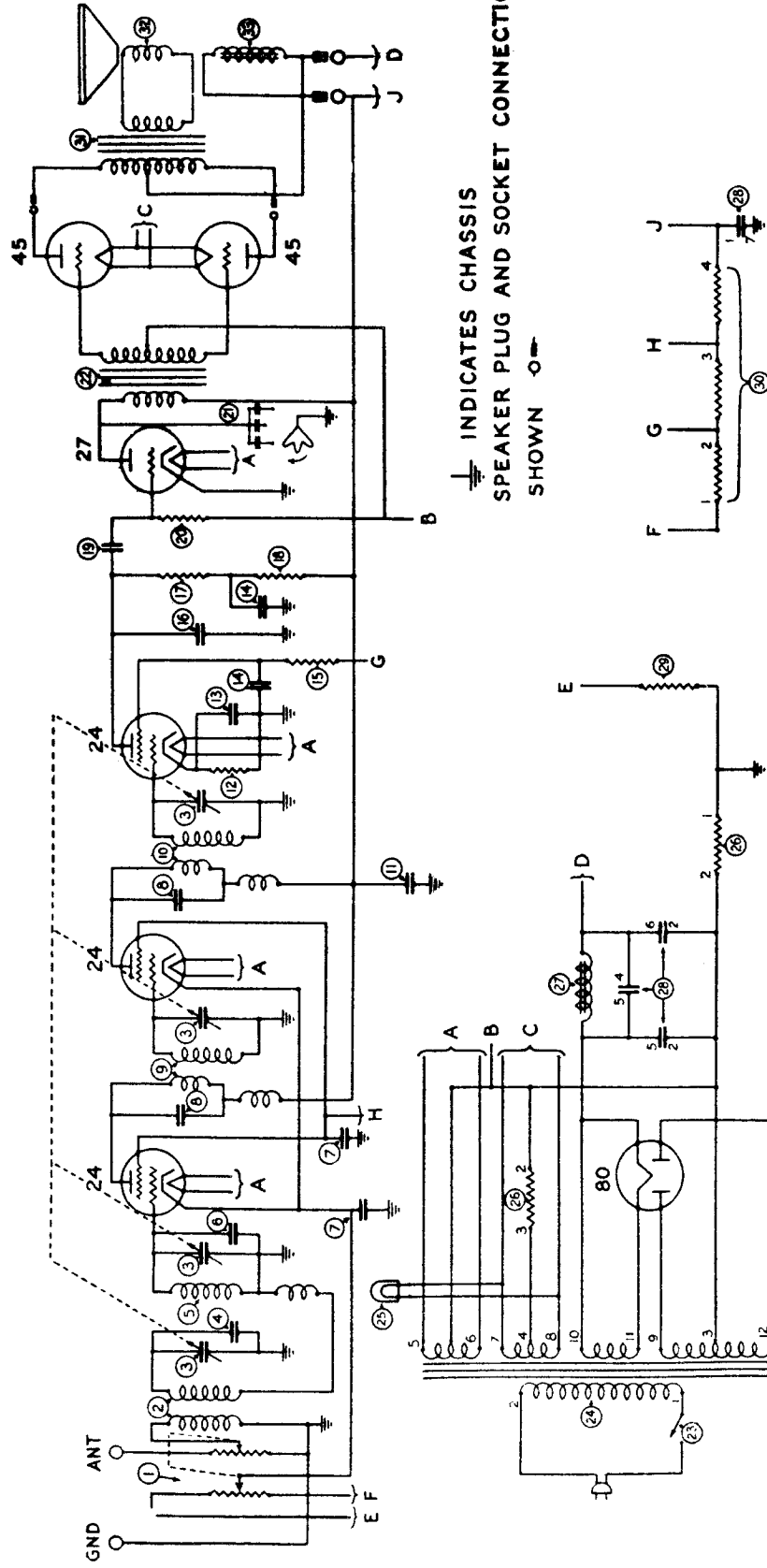
Philco Model 76



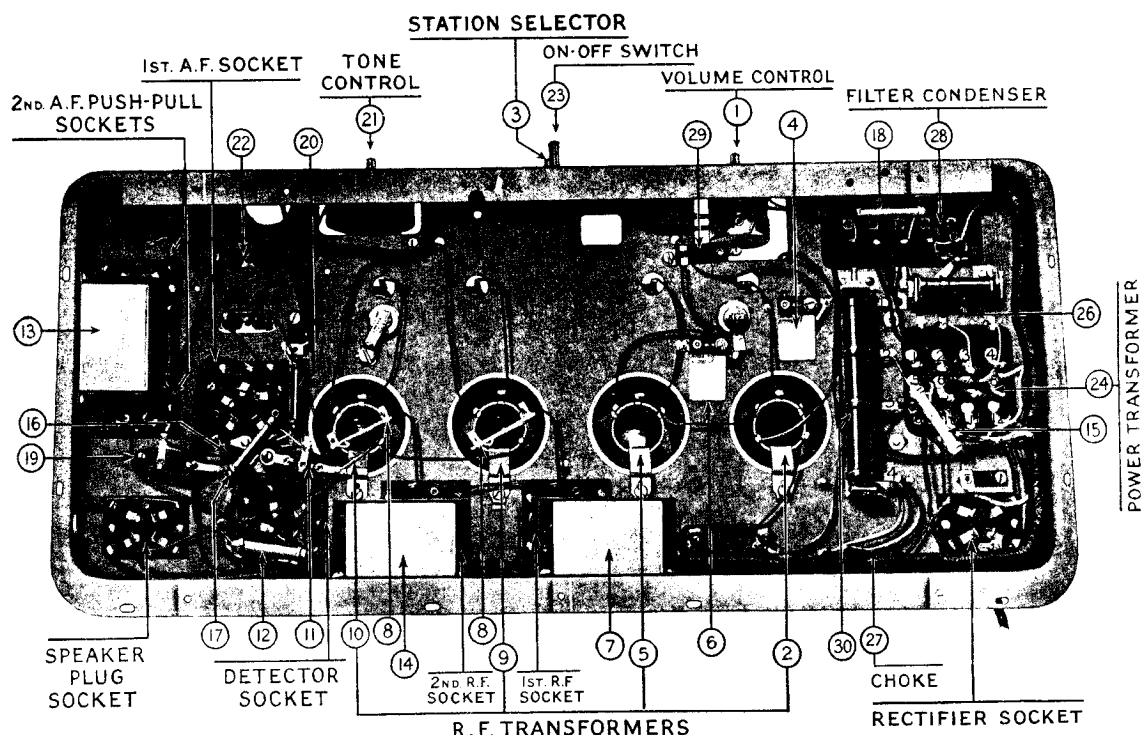
Replacement Parts for Model 76

PART No.		PART No.	
①	Local-Distance Switch . . .	3675	
②	Resistor	3777	
③	Resistor	3526	
④	1st R. F. Transformer . . .	3884-A	
⑤	Tuning Condenser	3376-E	
⑥	Compensating Condenser .	3772-A	
⑦	2d R. F. Transformer . . .	3884-B	
⑧	Condenser	3557	
⑨	Condenser	3892-A	
⑩	3d R. F. Transformer . . .	3884-C	
⑪	Condenser	3892-A	
⑫	4th R. F. Transformer . . .	3884-C	
⑬	Condenser	3584-B	
⑭	Resistor	3767	
⑮	Condenser	3583	
⑯	Condenser	3557	
⑰	Resistor	3768	
⑱	Condenser	3082	
⑲	Resistor	3769	
⑳	Resistor	3767	
㉑	Condenser	3897-A	
㉒	Resistor	3769	
㉓	Push-Pull Input Transformer	3872	
㉔	Push-Pull Output Transformer	2848	
㉕	Speaker Cone and Voice Coil	2814-B	
㉖	Speaker Field Coil	2850	
㉗	Resistor	3865	
㉘	Resistor	3867	
㉙	Resistor	3864	
㉚	Volume Control	3879	
㉛	B Filter Condenser	3870	
㉜	Pilot Lamp	3463	
㉝	Power Transformer	3868	
㉞	On-Off Switch	3517	
㉟	B Filter Choke	3422	
	Oscillator Kit	3540	
	Cabinet Touch-up Kit . . .	3809	

Philco Model 77



Philco Model 77

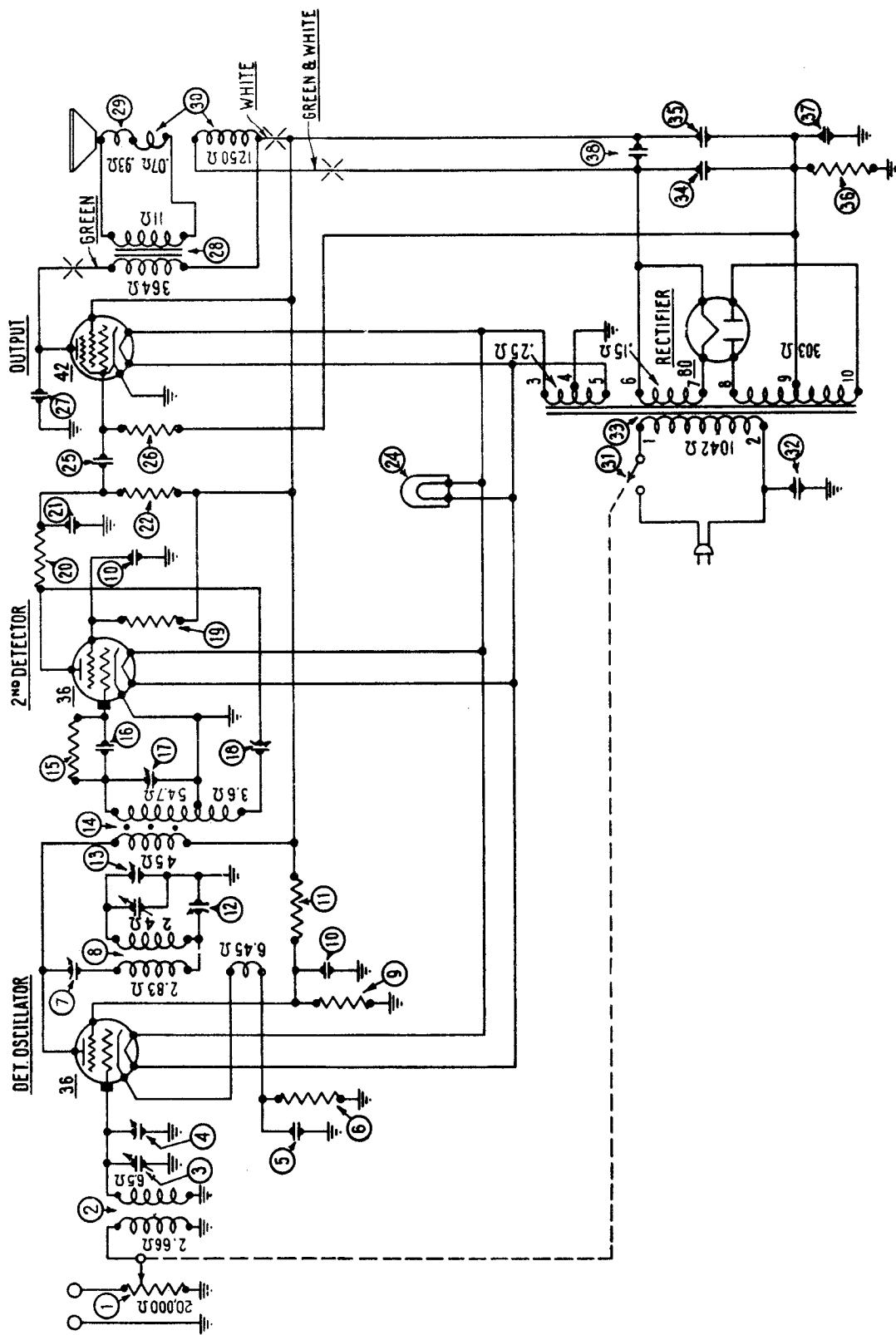


Replacement Parts for Model 77

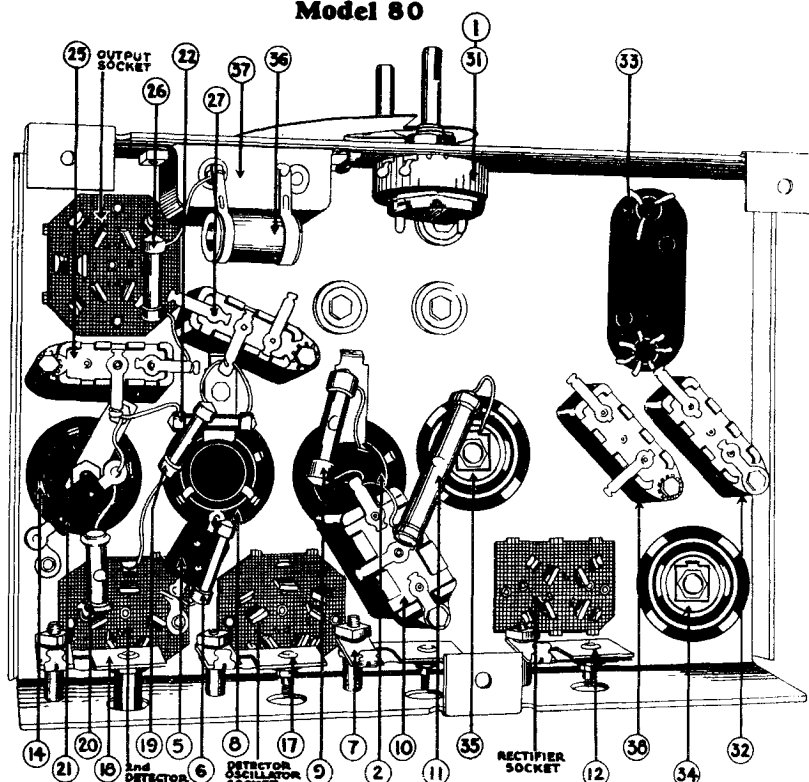
No.	Description	Part No.
①	Volume Control	4094
②	First RF Transformer	3884-A
③	Tuning Condenser	4000-B
④	First Compensating Condenser	3968-A
⑤	Second RF Transformer	3884-B
⑥	Second Compensating Condenser	3772-A
⑦	By-Pass Condenser	3557
⑧	Coupling Condenser	3892-A
⑨	Third RF Transformer	3884-C
⑩	Fourth RF Transformer	3884-C
⑪	By-Pass Condenser	3615-D
⑫	Resistor	3767
⑬	By-Pass Condenser	3583
⑭	By-Pass Condenser	3557
⑮	Resistor	3768
⑯	By-Pass Condenser	3082
⑰	Resistor	3769
⑱	Resistor	3767
⑲	Condenser	3903-F
⑳	Resistor	3769
㉑	Tone Control	4037-A

No.	Description	Part No.
㉒	Input Transformer	3872
㉓	On-Off Switch	4095
㉔	Power Transformer (60 Cycles)	3868
㉕	Power Transformer (25 Cycles)	3869
㉖	Pilot Lamp	3463
㉗	BC Resistor	3864
㉘	Choke	3422
㉙	Filter Condenser (60 Cycles)	3870
㉚	Filter Condenser (25 Cycles)	3871
㉛	C Resistor	4121
㉜	BC Resistor	3865
㉝	Output Transformer	2848
㉞	Voice Coil and Cone	2794-B
㉟	Field Coil	2850
㊱	Knob (Volume Control)	3579-A
㊲	Knob (Tuning Condenser)	3580-A
㊳	Knob (On-Off Switch)	3676-A
㊴	Dial Indicator	4006
㊵	Scale	4118
㊶	Speaker Plug and Cable (Short)	L-1101-A
㊷	Speaker Plug and Cable (Long)	L-1102-A

Model 80



Model 80



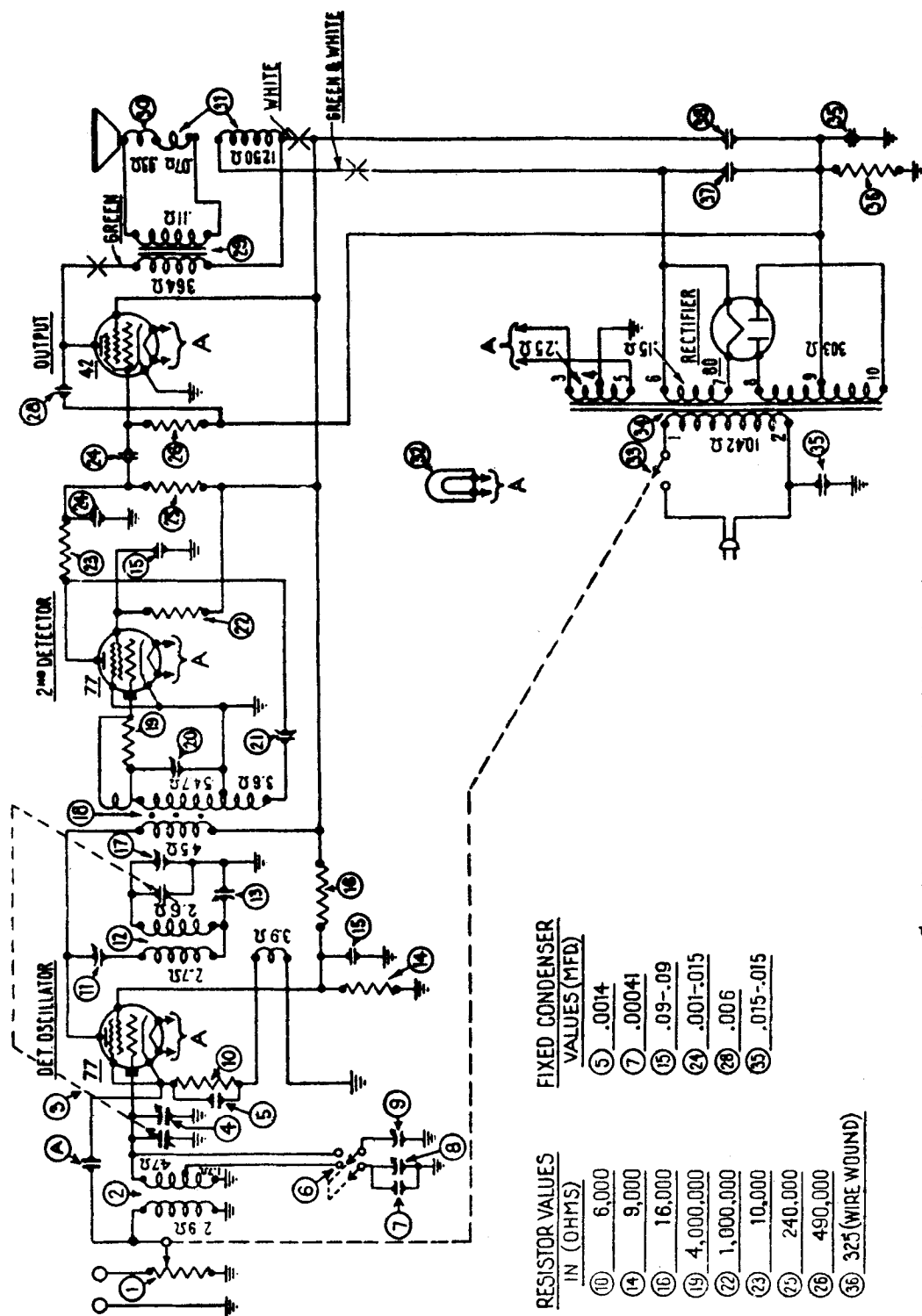
REPLACEMENT PARTS MODEL 80

No. on Figs. 2 and 3	Description	Part No.
①	Volume Control—Combined with On-Off Switch	7439
②	Antenna Transformer	05831
③	Tuning Condenser Assembly	05794
④	Compensating Condenser—Antenna—Part of Tuning Con. Assembly	
⑤	Condenser (710 Mmf.) White and Yellow	4520
⑥	Resistor (10,000 Ohms)	4412
⑦	Compensating Condenser—I.F. Primary	04000-A
⑧	Oscillator Coil	05832
⑨	Resistor (9,000 Ohms)	7501
⑩	Condenser (.09 Twin)	4989-B
⑪	Resistor (16,000 Ohms)	7500
⑫	Compensating Condenser—Low Frequency	04000-S
⑬	Compensating Condenser—High Frequency—Part of Tuning Con. Assembly	
⑭	I.F. Transformer	05834
⑮	Resistor (4,000,000 Ohms) Mounted on I.F. Transformer	6010
⑯	Condenser (50 Mmf.) White—Mounted on I.F. Transformer	3774
⑰	Compensating Condenser—I.F. Secondary	04000-D
⑱	Compensating Condenser	04000
⑲	Resistor (1,000,000 Ohms)	4409*
⑳	Resistor (10,000 Ohms)	4412
㉑	Condenser (1,000 Mmf.) Green and White	5215
㉒	Resistor (240,000 Ohms)	4410
㉓	Pilot Light	6608

No. on Figs. 2 and 3	Description	Part No.
㉔	Condenser (.015 Mfd.)	3793-B
㉕	Resistor (490,000 Ohms)	4517*
㉖	Condenser (.006 Mfd.)	7625-B*
㉗	Output Transformer	2660
㉘	Voice Coil and Cone Assembly	02861
㉙	Speaker Field and Bucking Coil Assembled with Pot	02677*
㉚	On-Off Switch—Combined with Volume Control	7439
㉛	Condenser (.01 Mfd.)	3903-AH*
㉜	Power Transformer 50-60 Cycles	7421
㉝	Power Transformer 25-40 Cycles	7422
㉞	Power Transformer 50-60 Cycles, 230 Volts	7423
㉟	Electrolytic Condenser (8.0 Mfd.)	6707
㊱	Electrolytic Condenser (4.0 Mfd.)	7467
㊲	Resistor (325 Ohms) Wire Wound	7465*
㊳	Electrolytic Condenser—Dry—(10 Mfd.)	7440*
㊴	Condenser (.01 Mfd.)	3903-AJ*
㊵	Bezel	7417
㊶	Dial Complete	05828
㊷	Tube Shield	7172
㊸	Knob (Large)	03063
㊹	Knob (Small)	03064
㊺	Knob Spring	5262
㊻	Grid Clip	4897
㊼	Four Prong Socket Assembly	5026
㊽	Five Prong Socket Assembly	4956
㊾	Six Prong Socket Assembly	6417
㊿	Chassis Mounting Screw	W-567
1	Chassis Mounting Washer	W-315
2	Rubber Washer	5189
3	Pilot Lamp Shield	5760

* A number of circuit changes were made on chassis of run No. 5 and above. This run number is rubber stamped in a star on the back of the chassis. Referring to Figs. 2 and 3, the condenser ㉔ connects to the B- end of resistor ㉕ instead of to ground. The bucking coil - that section of ㉙ in series with the voice coil - is shorted out. The 10 mfd. dry electrolytic condenser ㉛ is eliminated, and replaced with a substitute .015 section combined with ㉔, part 3793R. The .01 mfd. condenser ㉞ is eliminated. The positions of ㉟ ㊱ and ㊲ are changed in the chassis from that shown in Fig. 3.

Model 81

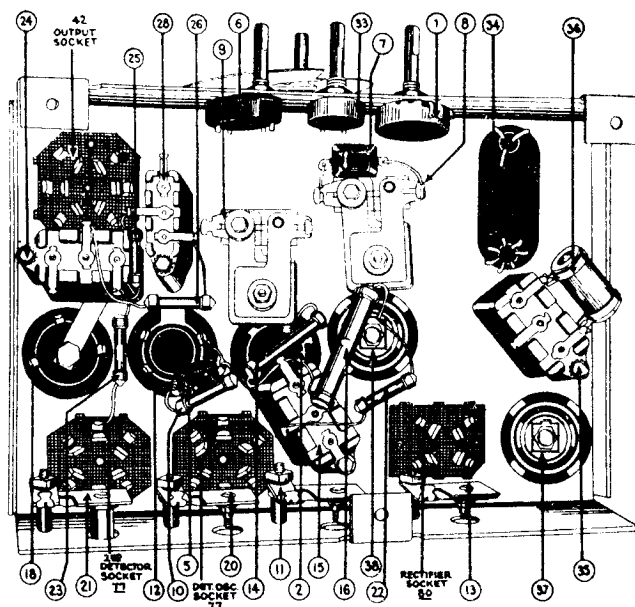


FIXED CONDENSER	
VALUES (MFD)	
5	.0014
7	.00041
15	.09-.09
24	.001-.015
28	.006
35	.015-.015

RESISTOR VALUES	
IN (OHMS)	
10	6,000
14	9,000
16	16,000
19	4,000,000
22	1,000,000
23	10,000
25	240,000
26	490,000
36	325 (WIRE WOUND)

Note ④—This capacity obtained by pair twisted wires.

MODEL 81



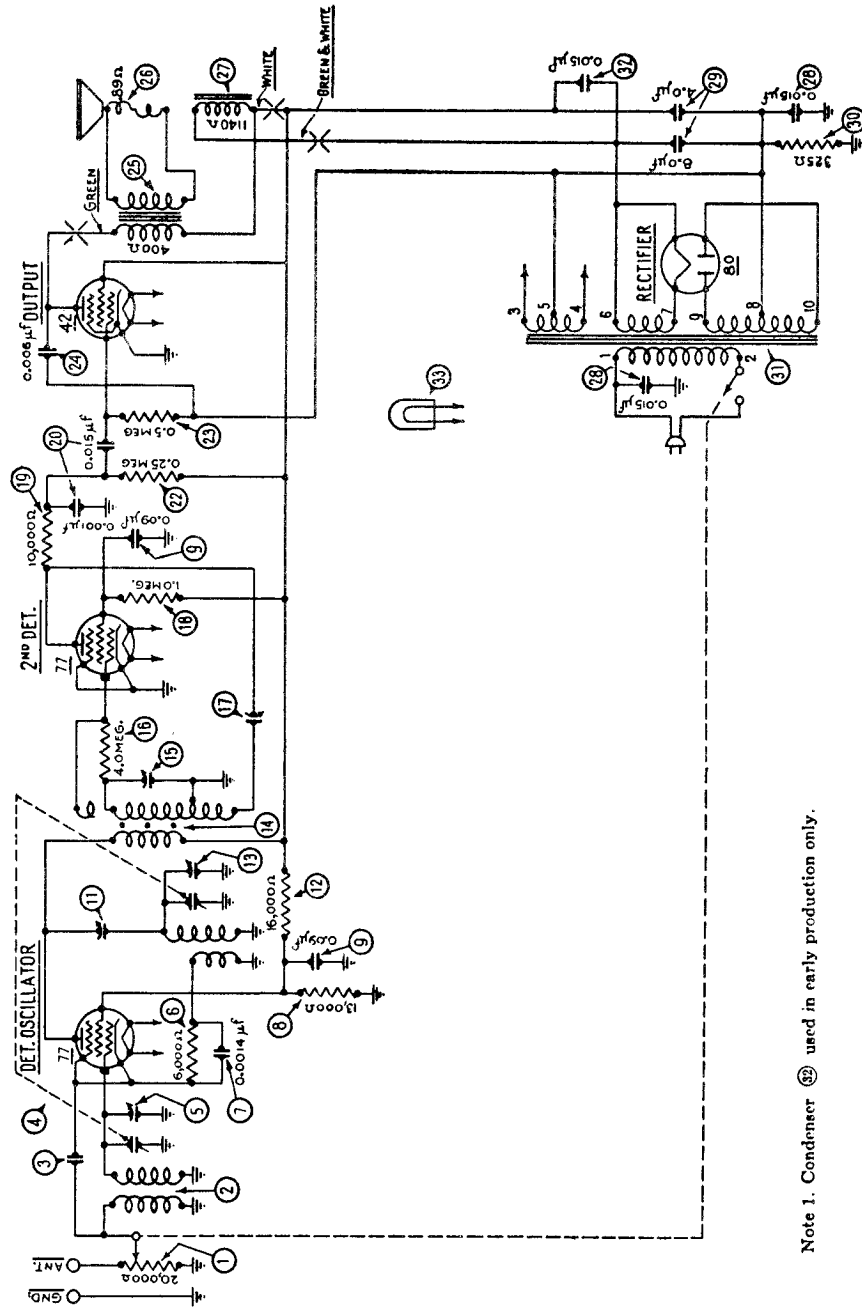
REPLACEMENT PARTS MODEL 81

No. on Figs.	Description	Part No.
①	Volume Control*	33-5002
②	Antenna Transformer	32-1030
③	Tuning Cond. Assembly	31-1006
④	Compensating Condenser (Part of ③)	
⑤	Cond. (Red and Black)	7007
⑥	Frequency Switch	42-1000
⑦	Cond. (Orange and Yellow)	30-1000
⑧	Compensating Condenser	04000-S
⑨	Compensating Condenser	04000-X
⑩	Resistor (Blue-Black-Red)	7352
⑪	Compensating Condenser (I.F. Primary)	04000-A
⑫	Oscillator Coil	32-1031
⑬	Compensating Condenser (Low Frequency)	04000-S
⑭	Resistor (White-Black-Red)	7501
⑮	Condenser	4989-B
⑯	Resistor (Brown-Black-Orange)	7500
⑰	Compensating Condenser (Part of ③)	
⑱	I.F. Transformer	06100
⑲	Resistor (Mounted on I.F. Transformer)	6010
⑳	Compensating Condenser (I.F. Secondary)	04000-D
㉑	Compensating Condenser	04000
㉒	Resistor (Brown-Black-Green)	4409
㉓	Resistor (Brown-Black-Orange)	4412
㉔	Condenser (Double)	7762-B
㉕	Resistor (Red-Yellow-Yellow)	4410

No. on Figs.	Description	Part No.
㉖	Resistor (Yellow-White-Yellow)	4517
㉗	Condenser	7625-B
㉘	Output Transformer	2660
㉙	Voice Coil and Cone Assembly	02861
㉚	Speaker Field and Bucking Coil (with Pot)	02667
㉛	Pilot Light	6608
㉜	"On-Off" Switch*	6416-W
㉝	Power Transformer—50-60 Cycles	7421
㉞	Power Transformer—25-40 Cycles	7422
㉟	Power Transformer—50-60 Cycles, 250 Volts	7423
㊱	Condenser (Double)	3793-R
㊲	Resistor (Wire Wound)	7465
㊳	Electrolytic Condenser (8 Mfd.)	7558
㊴	Electrolytic Condenser (4 Mfd.)	7467
㊵	Bezel	7417
㊶	Tube Shield	7172
㊷	Knob (Large)	03063
㊸	Knob (Small)	03064
㊹	Knob Spring	5262
㊺	Grid Clip	4897
㊻	Four Prong Socket Assembly	5026
㊼	Six Prong Socket Assembly	6417
㊽	Chassis Mounting Screw	W-567
㊾	Chassis Mounting Washer	W-315
㊿	Pilot Lamp Shield	5760

*On later production (run No. 3 and above, rubber stamped in a star on back of chassis) volume control ① and on-off switch ㉜ was combined. This new volume control and on-off switch is Part Number 7439.

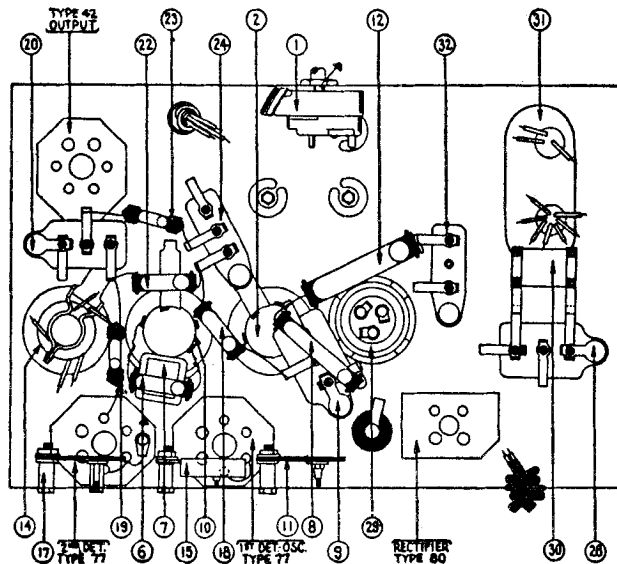
MODEL 84



Note 1. Condenser ③② used in early production only.

L. F. 460 K. C.

MODEL 84

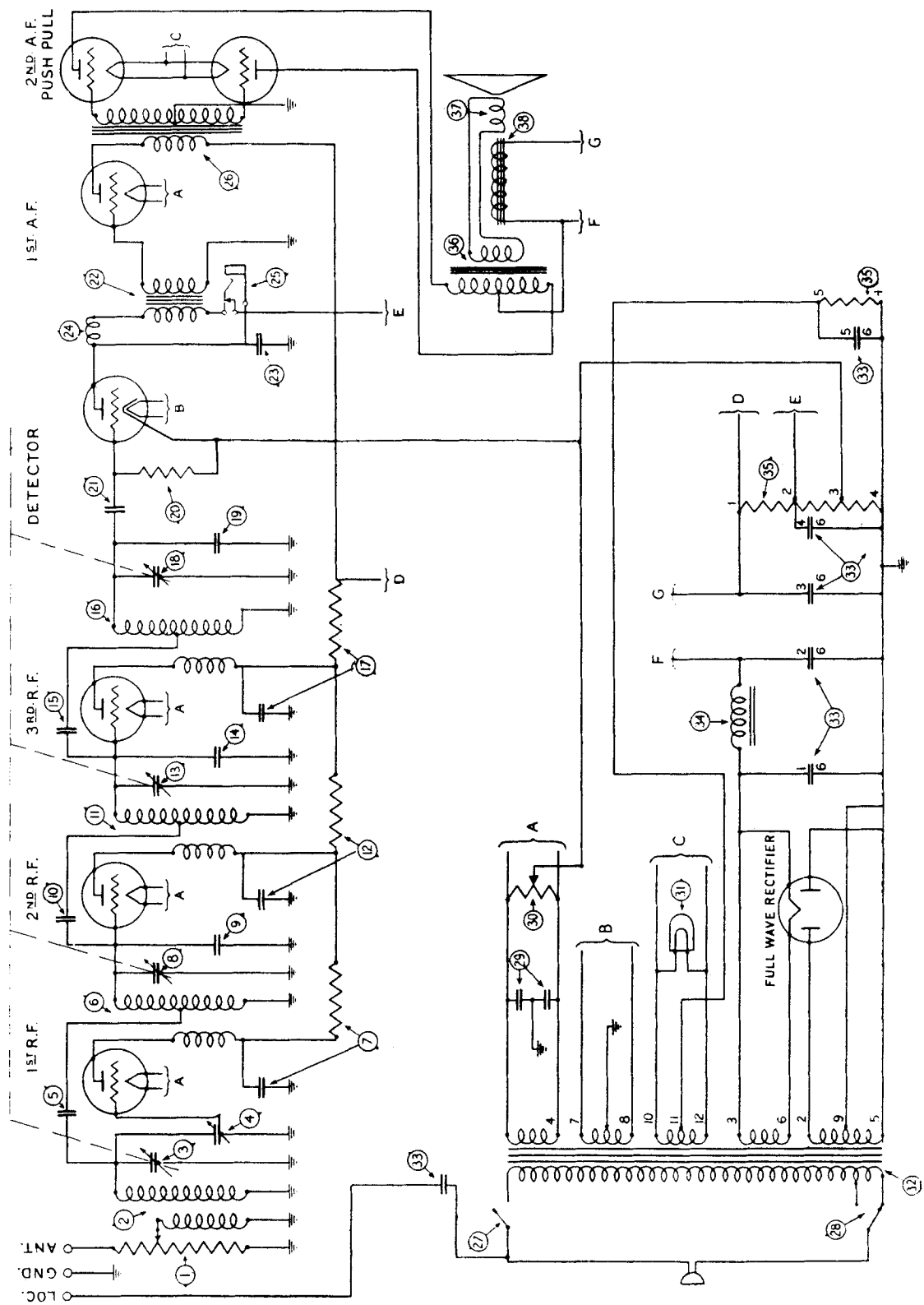


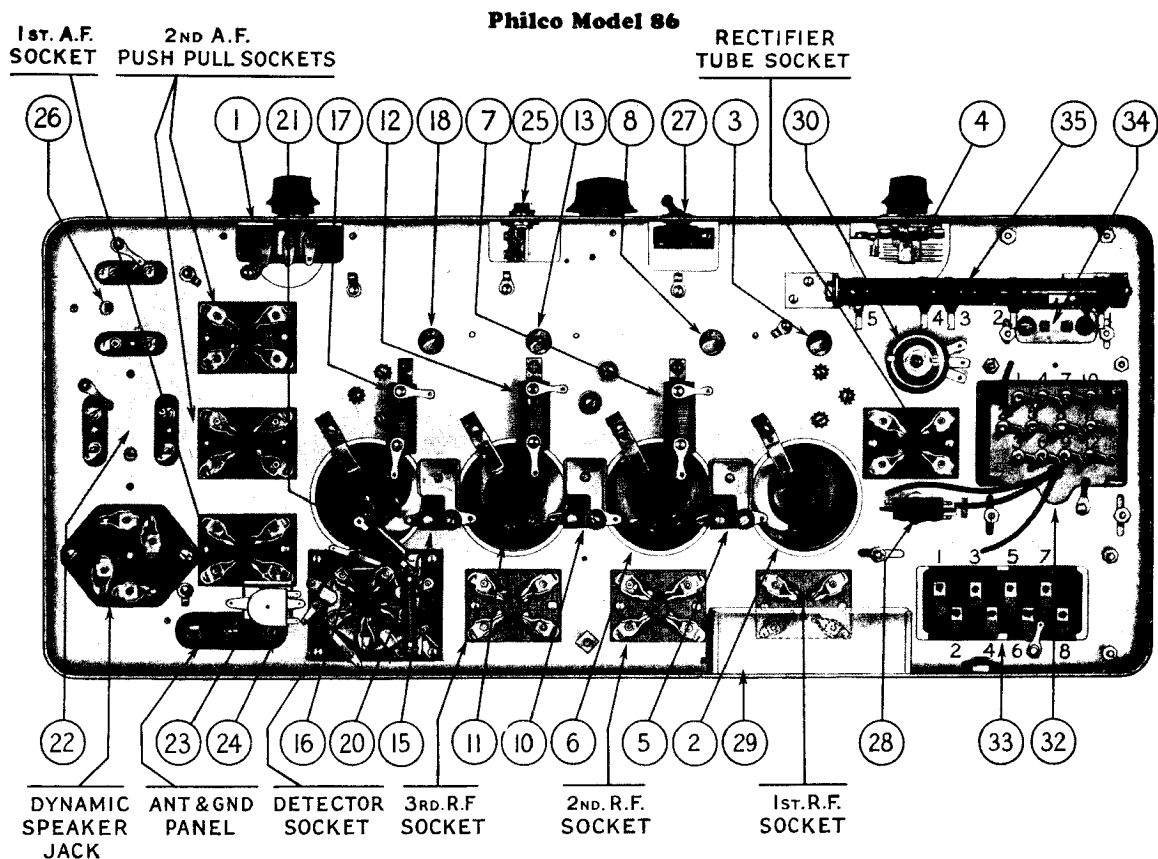
REPLACEMENT PARTS FOR MODEL 84

No. on Figs.	Description	Part No.	No. on Figs.	Description	Part No.
1	Volume control and on-off switch...	33-5055	22	Resistor (240000 ohms: Red, yellow, yellow).....	4410
2	Antenna transformer.....	32-1310	23	Resistor (490000 ohms: Yellow, white, yellow).....	4517
3	Condenser—capacity obtained by twisting ends of two leads together.....		24	Condenser .006 mfd.....	7625H
4	Tuning condenser assembly.....	31-1122	25	Output transformer.....	32-7019
5	Compensator (antenna).....	Part of 4	26	Voice coil and cone assembly.....	36-3014
6	Resistor (6000 ohms: Blue, Black, Red).....	7352	27	Field coil and pot assembly.....	36-3243
7	Condenser (.0014 mfd.).....	7007	28	Condenser (.015—.015).....	3793AD
8	Resistor (13000 ohms: Brown, orange, orange).....	3766	29	Condenser (electrolytic—4.0—8.0 mfd.).....	30-2013
9	Condenser (double .09 .09 mfd.)...	4989 AK	30	Resistor (wire wound 325 ohms)...	7465
10	Oscillator transformer.....	32-1311	31	Power transformer.....	32-7180
11	Compensator (I.F. primary).....	04000A	32	Condenser (.015).....	3793 C
12	Resistor (16000 ohms: Brown, blue, orange).....	7500	33	Pilot lamp.....	6608
13	Compensator (OSC HF).....	Part of 4	34	Four prong socket.....	7544
14	I.F. transformer.....	32-1313	35	Six prong socket.....	7547
15	Compensator (I.F. sec.).....	0-4000Y	36	Tube shield.....	8005
16	Resistor (4 meg.: Yellow, black, green) inside 13.....	6010	37	Knob.....	27-4038
17	Compensator (regeneration).....	0-4000	38	Pointer.....	27-5007
18	Resistor (1 meg.: Brown, black, green).....	4409	39	AC cord and plug.....	1-943A
19	Resistor (10000 ohms: Brown, black, orange).....	4412	40	Speaker cord.....	1-1474
20	Condenser (.015-.001).....	7702-B	41	Base shield plate.....	29-1724
			42	Chassis mounting screw.....	W-490
			43	Chassis mounting washer.....	W-315
			44	Output transformer shield.....	36-3025
			45	Dial scale.....	27-5031

NOTE: In later production tube shield 36, No. 8005 is replaced
by tube shield No. 28-1820 with lid No. 28-1821.

Philco Model 86

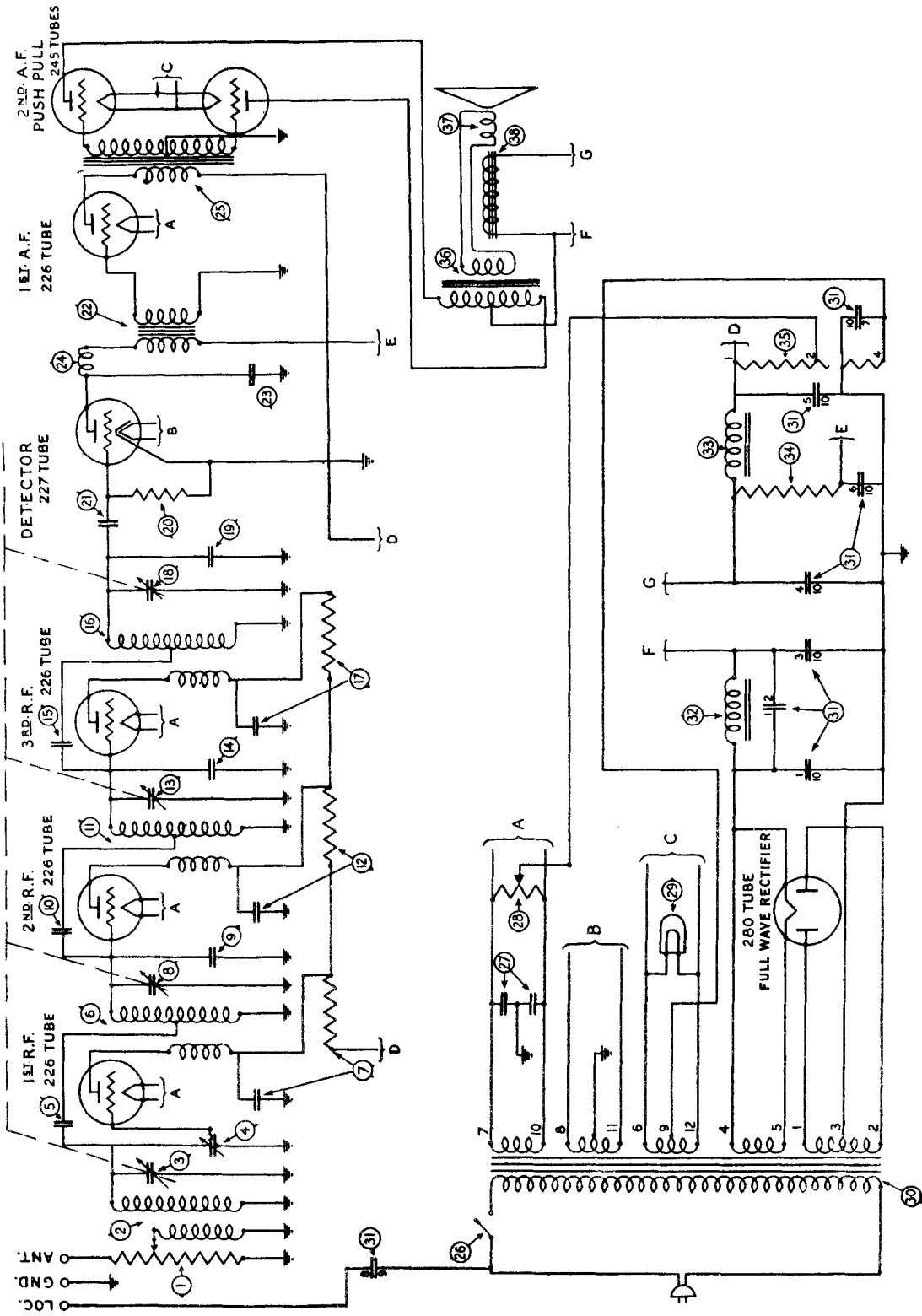




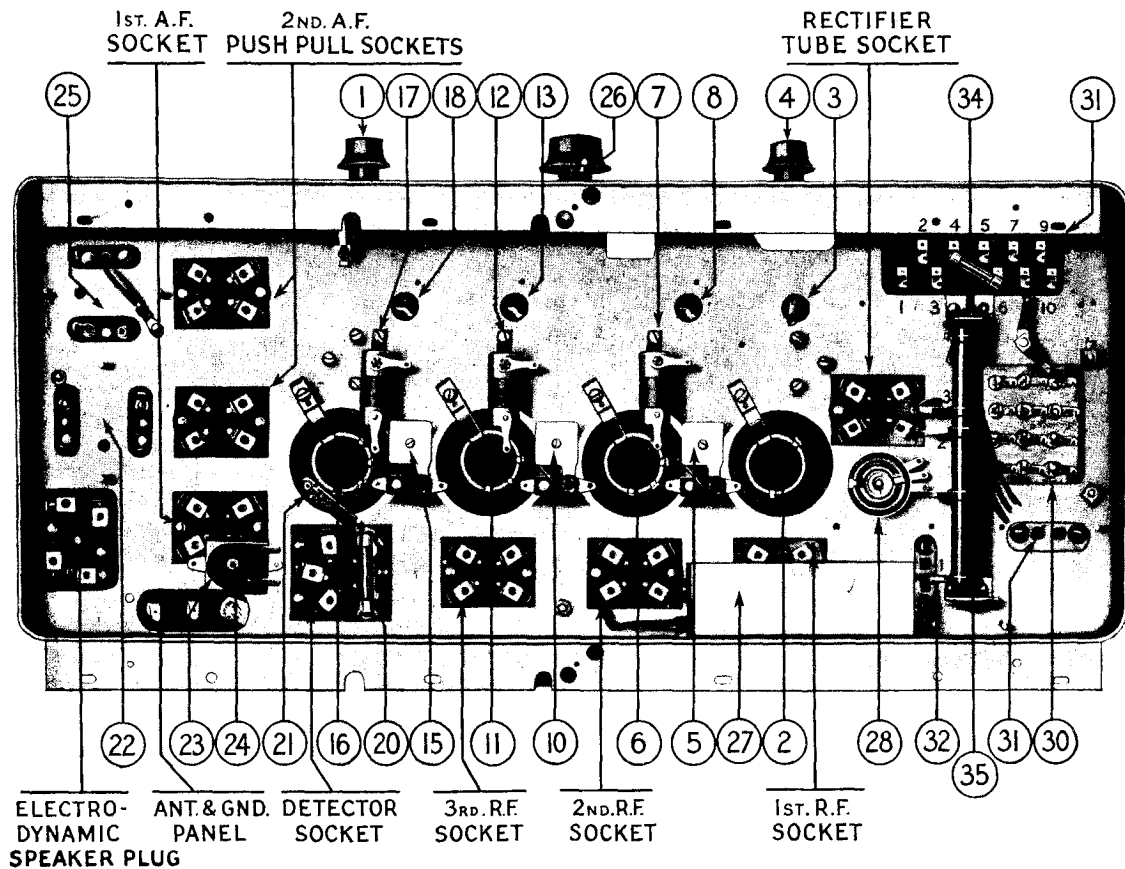
Replacement Parts for Model 86

PART NAME		PART No.		
①	Volume Control	3076	Speaker Plug	2871-A
②	R. F. Transformer (Antenna Tuning)	3075-B	Speaker Cone and Voice Coil	2898
③ - ④ - ⑫ - ⑬	Tuning Condenser (complete with drum and scale)	3001-B	Speaker Field Coil	2896
⑤	Range Control	3133	Cable Spring	3012
⑥ - ⑩ - ⑪	Neutralizing Condenser	3025-A	Control Knob Tuning Condenser	3035-A
⑦ - ⑨ - ⑬	R. F. Transformer	3075-A	Control Knob (Volume and Range Control)	3036-A
⑧ - ⑫ - ⑯	By-Pass Condenser (.1 mfd. with Plate Resistor Winding)	3292-A	226 Tube Socket	3051-A
⑨ - ⑭ - ⑰	Compensating Condensers	3282-A	Condenser Drive Cable	3054-A
⑩	Grid Leak	3083	Knob Spring	3103
⑪	Grid Condenser	3082	Fibre Adjusting Wrench	3164
⑫	Audio Transformer	3241	280 Tube Socket	3169-A
⑬	By-Pass Condenser (.001 mfd.)	3081	171 Tube Socket	3170-A
⑭	Detector R. F. Choke	3256-A	Pilot Lamp Socket Assembly	3202-A
⑮	Phonograph Pick-Up Jack	3087	Jack Insulator Nut	3231
⑯	Push-Pull Input Transformer	3242	Terminal Panel Assembly	3236-A
⑰	Power-Toggle Switch	3253	Speaker Socket	3247-A
⑱	Primary Tap Switch	3116	227 Tube Socket, Spring Type	3263-A
⑲	Filament By-Pass Condenser (2 sections .5 mfd.)	3080	Jack Insulator	3272
⑳	6-Ohm Hum Adjuster	3096	A.C. Attachment Cord and Plug	L-943-A
㉑	Pilot Lamp	3105	Wiring Cable	L-1037
㉒	Power Transformer (60 cycle)	3271	Speaker Cable	L-1039
㉓	Filter Condenser Block (60 cycle)	3246	Socket Wrench for Speaker Mounting Bolts	3312
㉔	Filter Choke Coil	3269	<i>Note:—When ordering replacements for 25-cycle Receivers (Model 82) use the following part numbers instead of those given above. All other part numbers remain the same.</i>	
㉕	B-C Section Resistor	3232	Power Transformer (25 cycle)	3278
㉖	Push-Pull Output Transformer	2897	Filter Condenser Block (25 cycle)	3279

Philco Model 87



Philco Model 87



PART NAME

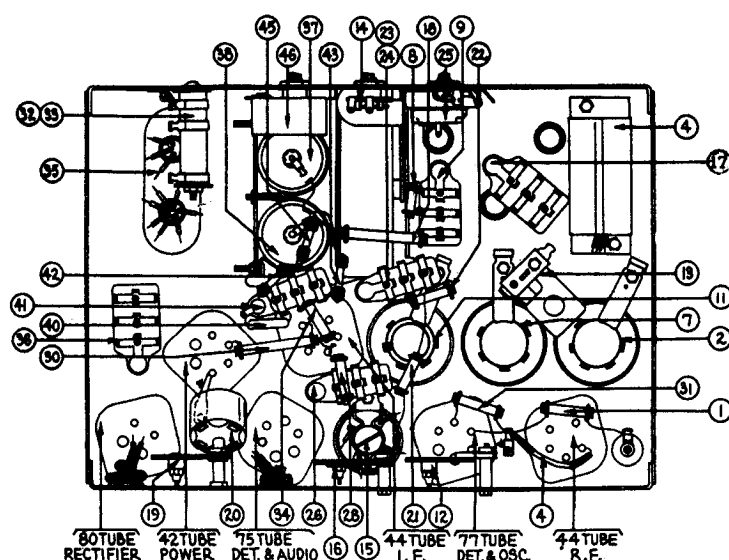
PART No.

①	Volume Control	3076	③④	Detector Resistor	3542
②	R. F. Transformer (Antenna Tuning)	3075-B	⑤	B-C Resistor	3399
③ - ④ - ⑤ - ⑥	Tuning Condenser (Complete with Drum and Scale)	3001-B	⑥	Push-Pull Output Transformer	2848
④	Range Control	3133	⑦	Speaker Cone and Voice Coil	2844-A
⑤ - ⑥ - ⑦	Neutralizing Condenser	3441-A	⑧	Speaker Field Coil	2850
⑥ - ⑦ - ⑧	R. F. Transformer	3075-A		Speaker Plug	2871-A
⑦ - ⑧ - ⑨	By-Pass Condenser (.1 mfd. with Plate Resistor Winding)	3292-A		Cable Spring	3012
⑧ - ⑨ - ⑩	Compensating Condensers	3435-A		Control Knob Tuning Condenser	3301
⑨	Grid Leak	3083		Control Knob (Volume and Range Control)	3300
⑩	Grid Condenser	3082		Condenser Drive Cable	3484
⑪	Audio Transformer	3241		Knob Spring	3306
⑫	By-Pass Condenser (.001 mfd.)	3081		Fibre Adjusting Wrench	3164
⑬	Detector R. F. Choke	3256-A		4-Hole Tube Socket	3423-A
⑭	Push-Pull Input Transformer	3242		Pilot Lamp Socket Assembly	3202-A
⑮	Power Toggle Switch	3501		Terminal Panel Assembly	3236-A
⑯	Filament By-Pass Condenser (2 Sections 5 mfd.)	3080		Speaker Socket	3464-A
⑰	6-Ohm Hum Adjustor	3096		5-Hole Tube Socket	3442-A
⑱	Pilot Lamp	3463		A.C. Attachment Cord and Plug	L-943-A
⑲	Power Transformer	3400		Speaker Cable	L-1056-A
⑳	Filter Condenser Block	3401		Socket Wrench for Speaker Mounting Bolts	3312
㉑	Filter Choke Coil (First)	3422		Tuning Scale	3396
㉒	Filter Choke Coil (Second)	3472		Oscillator Kit	3540
				Wood Switch Plug	3627

[illegible]

I. F.—260 K. C.

Replacement Parts for Model 89 (Code 123)



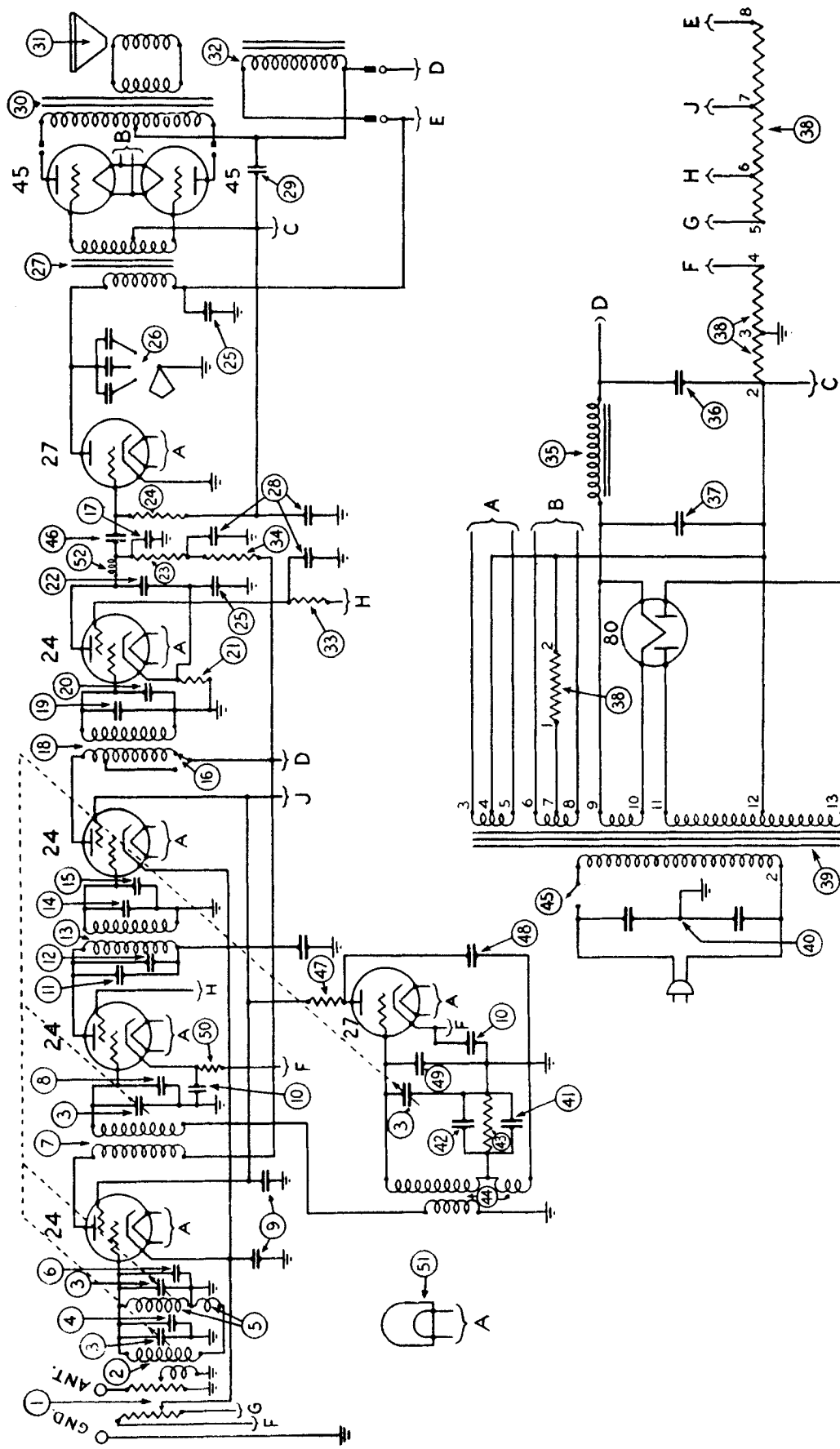
Description	Part No.
① Resistor (10,000 ohms).....	4412
② Antenna Transformer.....	32-1062
③ Tuning Condenser Gang.....	31-1053
③a Compensator (Antenna).....	Part of ③
③b Compensator (R. F.).....	Part of ③
③c Compensator (Osc.).....	Part of ③
④ Condenser (.09-.05-.09-.05-.25 mf.).....	06624
⑤ Resistor (300 ohms).....	33-3010
⑥ Condenser (0.05 mf.).....	Part of ④
⑦ Detector Coil.....	32-1063
⑧ Resistor (8,000 ohms).....	33-1114
⑨* Condenser (.0015 mf. and .05 mf.).....	3615-XG
⑩ Pilot Light.....	6608
⑪ Oscillator Coil.....	06620
⑫ Compensating Condenser (Pri. 1st I. F.).....	31-6024
⑬ Compensating Condenser (L. F. Series).....	04000-S
⑭ Waveband Switch.....	42-1016
⑮ 1st I. F. Transformer.....	32-1289
⑯ Compensating Condenser (1st I. F. Sec.).....	04000-M
⑰ Condenser (0.09 mf.) (Twin).....	4989-DG
⑱ Resistor (5,000 ohms).....	3526
⑲ Compensating Condenser (2nd I. F. Pri.).....	04000-A

*The .05 mf. section connects the same as condenser ⑥.

Description	Part No.
⑳ 2nd I. F. Transformer.....	06622
㉑ Resistor (2.0 meg.).....	5872
㉒ Resistor (50,000 ohms).....	4518
㉓ Condenser (.00011 mf.).....	8035-DG
㉔ Condenser (.00011 mf.).....	Part of ㉓
㉕ Volume Control, On-Off Switch.....	33-5004
㉖ Condenser (0.01 mf.).....	3903-SU
㉗ Condenser (0.09 mf.).....	Part of ④
㉘ Resistor (1.0 meg.).....	4409
㉙ Condenser (0.09 mf.).....	Part of ⑰
㉚ Resistor (39,000 ohms).....	33-1027
㉛ Resistor (50,000 ohms).....	4518
㉜ B. C. Resistor (32 ohms).....	7998
㉝ B. C. Resistor (235 ohms).....	Part of ㉜
㉞ Resistor (100,000 ohms).....	4411
㉟ Power Transformer.....	8046
㊱ Condenser (0.015-0.015 mf.).....	3793-DG
㊲ Condenser (Electrolytic) (8 mf.).....	7558
㊳ Condenser (Electrolytic) (8 mf.).....	7558
㊴ Condenser (0.05 mf.).....	Part of ④
㊵ Condenser (250 mmf.).....	5858
㊶ Condenser (0.01 mf.).....	3903-SU
㊷ Resistor (70,000 ohms).....	5385
㊸ Resistor (500,000 ohms).....	4517
㊹ Condenser (0.25 mf.).....	Part of ④
㊺ Resistor (70,000 ohms).....	5385
㊻ Tone Control.....	06764
㊼ Condenser (0.015 mf.).....	Part of ㊹
㊽ Condenser (0.01 mf.).....	Part of ㊹
㊾ Output Transformer.....	2580
㊿ Replacement Cone Assembly (K-21).....	36-3159
① Replacement Field Coil Assembly (K-21).....	36-3245
I. F. Shield.....	4450
R. F. Shield.....	5084
R. F. Shield.....	8000
Tube Shield Body.....	28-2726
Tube Shield Base.....	28-2725
Speaker Cable.....	02720
Drive Cord Spring.....	7776
Drive Cord.....	31-1457
Dial Hub and Scale.....	31-1590
Bezel.....	27-4113
Bezel Screws.....	W841B
Knob (Tuning).....	27-4051
Knob (Volume, Tone, Wave Switch).....	27-4052

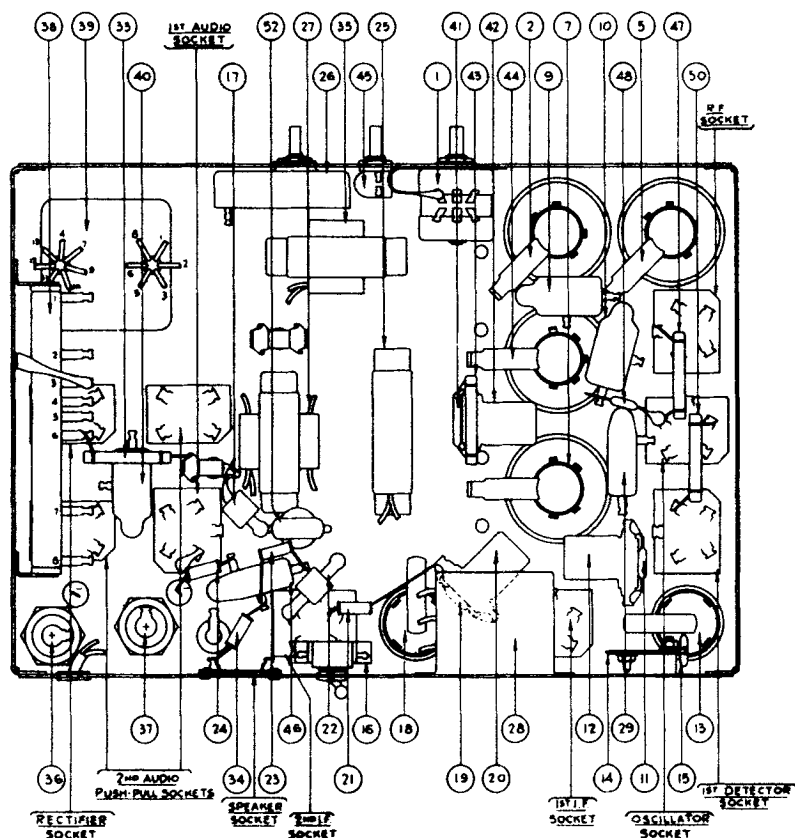
Models 90 and 90-A

WITH 2- TYPE 45 TUBES



Models 90 and 90-A

WITH 2- TYPE 45 TUBES

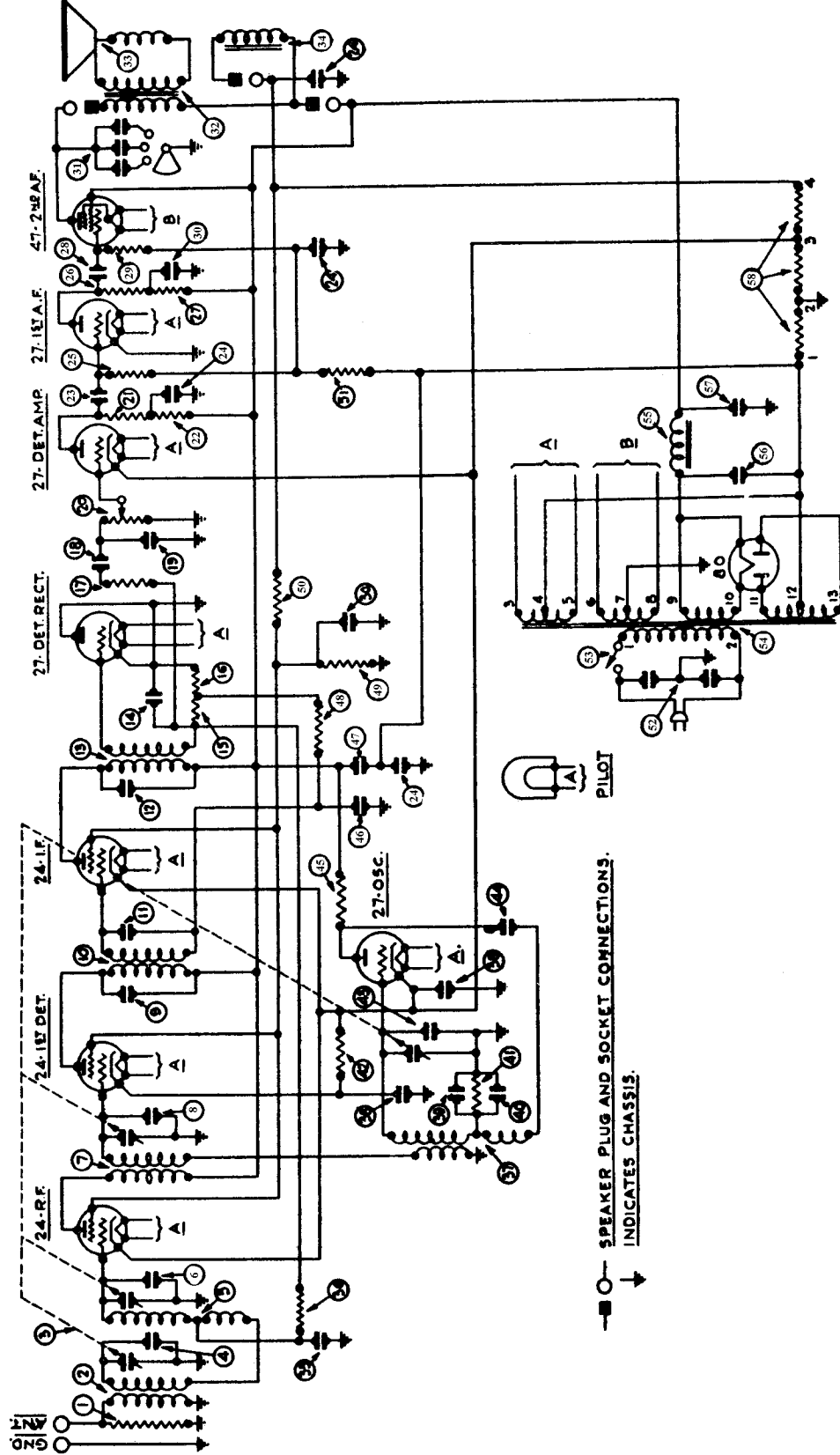


REPLACEMENT PARTS—MODELS 90 and 90-A RECEIVERS

No. on Figs. 3 and 4	Description	Part No.	No. on Figs. 3 and 4	Description	Part No.
①	Volume Control	5039	④①	Condenser .015 M. F. (Double)	3793-E
②	1st R. F. Transformer	03013	④②	Condenser .0007 M. F.	3463
③	Gang Condenser—50 to 60 cycles	03001	④③	Compensating Condenser	03050
④	Gang Condenser—25 to 40 cycles	03078	④④	Resistor—50,000 Ohms	4237
⑤	Compensating Condenser (Part of Tuning Condenser Assembly)		④⑤	Oscillator Coil	03016
⑥	2nd R. F. Transformer	03014	④⑥	On-Off Switch	4066
⑦	Compensating Condenser (Part of Tuning Condenser Assembly)		④⑦	Condenser .001 M. F.	5215
⑧	1st Det. Transformer	03015	④⑧	Resistor—13,000 Ohms	3766
⑨	Compensating Condenser (Part of Tuning Condenser Assembly)		④⑨	Condenser .00011 M. F.	4519
⑩	Condenser .09 M. F. (Double)	4080-C	④⑩	Compensating Condenser (Part of Tuning Condenser Assembly)	
⑪	Condenser .09 M. F. (Double)	4080-B	④⑪	Resistor—5,000 Ohms	3526
⑫	Fixed Condenser .00011	Assembled	④⑫	Pilot Bulb	3463
⑬	Compensating Condenser	3772-C	④⑬	R. F. Choke	03068
⑭	1st I. F. Transformer	03009	④⑭	Line Cord and Plug	L-943
⑮	Compensating Condenser	Assembled	④⑮	Tube Shield	03002
⑯	Fixed Condenser .00011	Assembled	④⑯	Knob (large) Dial Control	4958-A
⑰	Normal Maximum Switch	3116	④⑰	Spring (Dial Knobs)	4147
⑱	Condenser (.000035 mf)	4090	④⑱	Knobs (small) Tone and Volume Control	4959-A
⑲	2nd I. F. Transformer	03143	④⑲	Knob (switch)	4290-A
⑳	Compensating Condenser	Assembled	④㉑	Grid Clip	4897
㉑	Fixed Condenser .00011	Assembled	④㉒	Speaker Plug and Cable	L-1124-A
㉒	Resistor—50,000 Ohms	4518	④㉓	Grommet for R. F. Transformer Shield	3747
㉓	Condenser .00035	4990	④㉔	Rectifier Tube Socket	5026
㉔	Resistor—250,000 Ohms	4410	④㉕	Four Prong Socket Assembly	4955
㉕	Resistor—1,000,000 Ohms	4409	④㉖	Five Prong Socket Assembly	4956
㉖	Condenser .5 M. F. (Double)	03024	④㉗	Speaker Socket	4957
㉗	Tone Control	4037-A	④㉘	Volume Control Insulator	4092
㉘	1st Audio Transformer	4952	④㉙	Volume Control Insulator	4286
㉙	Condensers 2—25 M. F. and 1—.5 M. F.	03022	④㉚	Fahnstock Clip	L-1126
㉚	Condenser .05 M. F.	3615-G	④㉛	Finishing Rosettes	4267
㉛	Output Transformer:		④㉜	Speaker Mounting Screws (8 used)	W-493
㉜	H ₁ (For Large Cone Assembly)	2848	④㉝	Speaker Mounting Screws (1 used)	W-493
㉝	K ₁ (For Small Cone Assembly)	2766	④㉞	Dial	5021
㉞	Voice Coil Assembly and Cone:		④㉟	Mica for Gang Condenser Compensating	3473
㉟	H ₂ (Large Cone)	02997	④㊱	Insulating Washer for Compensating	3500
㊱	K ₂ (Small Cone)	02996	④㊲	Condenser	3614
㊲	Speaker Field—Assembled with Pot and Frame		④㊳	Tuning Condenser Mounting Washer	3615
㊳	Resistor—250,000 Ohms	3766	④㊴	Tuning Condenser Mounting Washer	3616
㊴	Resistor—250,000 Ohms	4410	④㊵	Tuning Condenser Mounting Sleeve	4255
㊵	Filter Choke	4951	④㊶	Spring for Tuning Condenser	5009
㊶	Condenser 6 M. F. Electrolytic Type (50-60 cycles)	4916	④㊷	Base	03061-A
㊷	Condenser 10 M. F. Electrolytic Type (25-40 cycles)	5142	④㊸	Complete Pilot Bracket	4925
㊸	Condenser 6 M. F. Electrolytic Type (25-40) and (50-60) cycles	4916	④㊹	Dial Disc	4937
㊹	B. C. Resistor	4953	④㊺	Light Shield Screen	4980
㊺	Power Transformer (50 to 60 cycles)	4038	④㊻	Friction Drive Bracket	4936
㊻	Power Transformer (25 to 40 cycles)	4939	④㊼	Brass Collar for Friction Drive	4931
			④㊽	Shaft	

Models 90 and 90-A

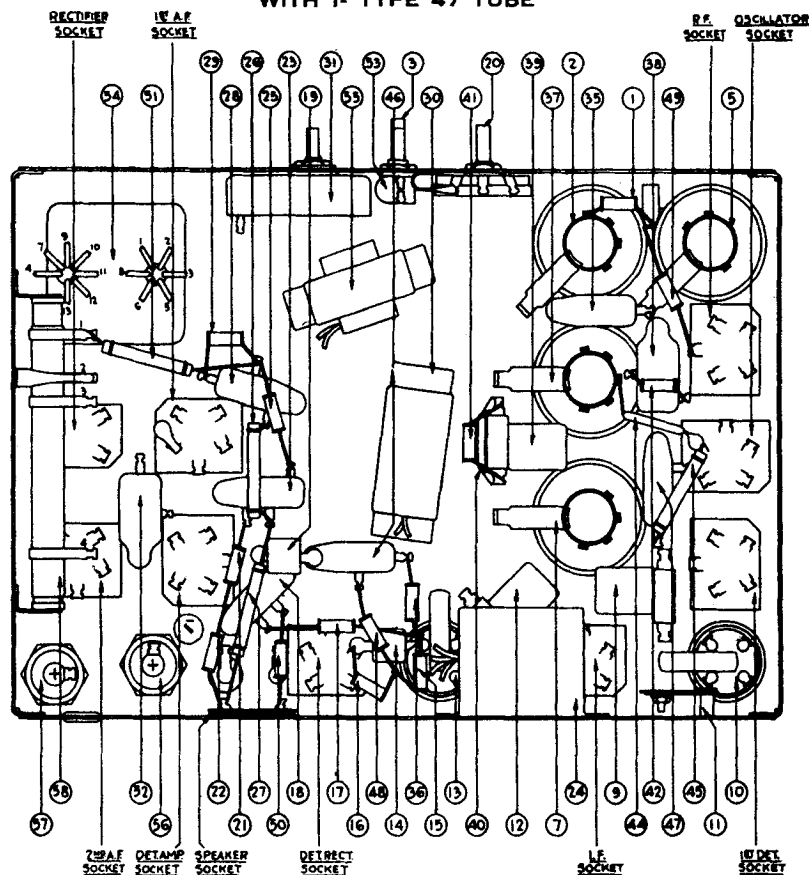
ABOVE SERIAL NO.237,001
WITH 1- TYPE 47 TUBE



Models 90 and 90-A

ABOVE SERIAL NO. 237,001

WITH 1- TYPE 47 TUBE

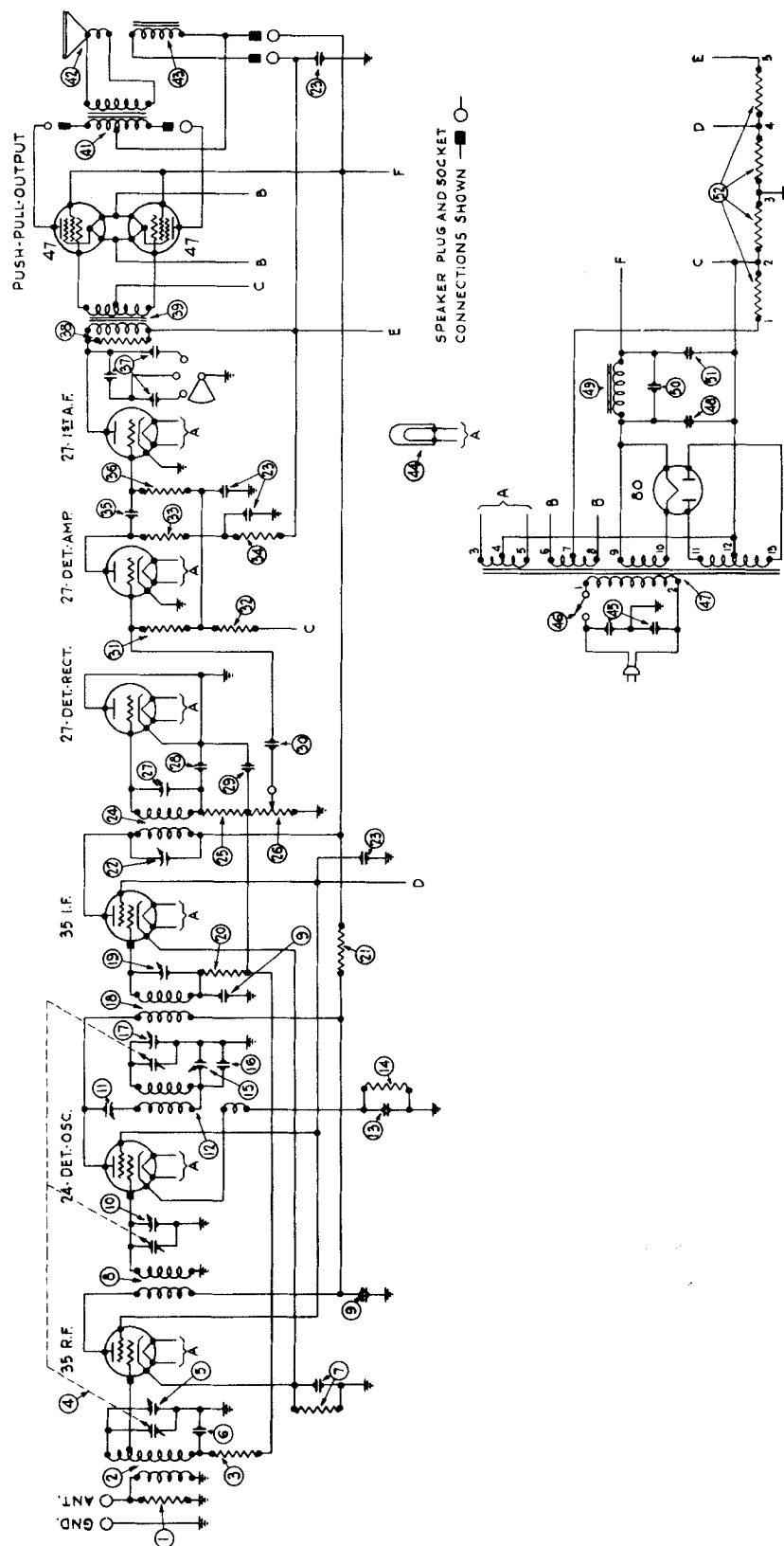


REPLACEMENT PARTS—MODELS 90 and 90-A RECEIVERS

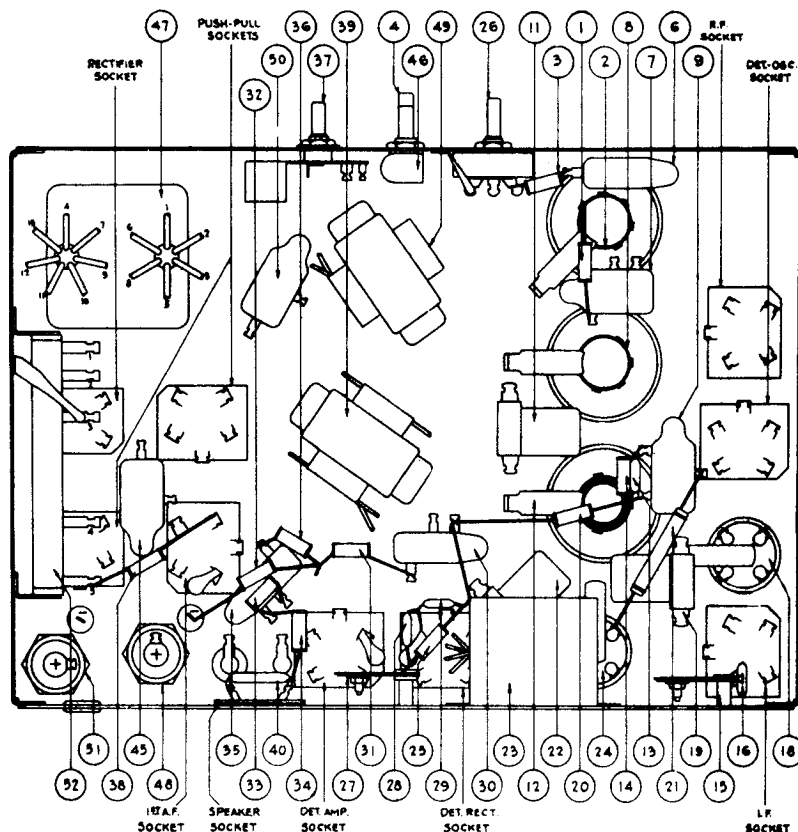
(Above Serial No. 237,001)

No. on Figs. 3 and 4	Description	Part No.	No. on Figs. 3 and 4	Description	Part No.
①	Resistor (10,000 ohms)	4412	③	By-Pass Condenser (.09 mfd.) double	4989-G
②	First R. F. Transformer	03360	④	Compensating Condenser (Assembled)	03050
③	Gang Condenser (50-60 cycles)	03001	⑤	Condenser (.0007 mfd.)	4518
④	Gang Condenser (25-40 cycles)	03078	⑥	Resistor (51,000 ohms)	4518
⑤	Compensating Condenser (part of gang condenser assembly)	03014	⑦	Resistor (5,000 ohms)	5310
⑥	Second R. F. Transformer	03016	⑧	Compensating Condenser (part of tuning condenser assembly)	4519
⑦	First Detector Transformer	03015	⑨	Condenser (110 mmf.)	4237
⑧	Compensating Condenser (part of gang condenser assembly)	03015	⑩	Resistor (51,000 ohms)	3615-U
⑨	Compensating Condenser (First I. F. Primary)	03315	⑪	By-Pass Condenser (.05 mfd.)	3615-E
⑩	First I. F. Transformer	03009	⑫	Resistor (490,000 ohms)	4517
⑪	Compensating Condenser (First I. F. Secondary)	03315	⑬	Resistor (70,000 ohms)	5385
⑫	Compensating Condenser (Second I. F. Primary)	03317	⑭	Resistor (25,000 ohms)	4516
⑬	Second I. F. Transformer	03345	⑮	Resistor (240,000 ohms)	3768
⑭	Condenser (110 mmf.)	4519	⑯	Condenser (.015 mfd.) double	3793-E
⑮	Resistor (51,000 ohms)	4518	⑰	On-Off Switch	4095
⑯	Resistor (51,000 ohms)	4518	⑱	Power Transformer (50-60 cycles)	5362
⑰	Resistor (99,000 ohms)	4411	⑲	Power Transformer (25-40 cycles)	5363
⑱	By-Pass Condenser (.01 mfd.)	3903-M	⑳	Power Transformer (50-60 cycles, 220 volts)	5364
⑲	Condenser (.00025 mfd.)	3082	㉑	Choke	4951
⑳	Volume Control	5366	㉒	Condenser (6 mfd.) Electrolytic type (50-60 cycles)	4916
㉑	Resistor (51,000 ohms)	4518	㉓	Condenser (10 mfd.) Electrolytic type (25-40 cycles)	5142
㉒	Resistor (70,000 ohms)	5385	㉔	Condenser (6 mfd.) Electrolytic type (50-60 cycles)	4916
㉓	By-Pass Condenser (.01 mfd.)	3903-M	㉕	Condenser (10 mfd.) Electrolytic type (25-40 cycles)	5142
㉔	Condenser (1-1 mfd., 1-13 mfd., 2-25 mfd.)	03325	㉖	B. C. Resistor	5365
㉕	Resistor (240,000 ohms)	4410	㉗	Line Cord and Plug	L-943
㉖	Resistor (25,000 ohms)	3656	㉘	Tube Shield (Large)	03373
㉗	Resistor (25,000 ohms)	3656	㉙	Tube Shield (27 type)	5387
㉘	By-Pass Condenser (.01 mfd.)	3903-P	㉚	Pilot Bulb	2463
㉙	Resistor (240,000 ohms)	4410	㉛	Pilot Bracket Complete	03081-A
㉚	Condenser (.25 mfd., 1 mfd.)	03327	㉜	Knob (Large)	4958-A
㉛	Tone Control	4087-A	㉝	Knob (Small)	4959-A
㉜	Output Transformer	2673	㉞	Knob (Switch)	4290-A
㉝	Voice Coil Assembly and Cone: H ₂ (Large Cone)	02997	㉟	Spring (For small knobs)	4147
㉞	K ₂ (Small Cone)	02996	㊱	Spring (For large knobs)	5262
㉟	Speaker Field (Assembled with pot and frame)	2673	㊲	Grid Clip	4897
㊱	By-Pass Condenser (.05 mfd.)	3615-W	㊳	Five Prong Socket Assembly	4956
㊲	Resistor (490,000 ohms)	4517	㊴	Four Prong Socket Assembly	4955
㊳	Oscillator Coil	03016	㊵	Volume Control Insulator	4092
			㊶	Dial	5021
			㊷	Light Shield Screen	4937
			㊸	Bezel	5009

MODEL 90
WITH 2- TYPE 47 TUBES
SERIAL NO. 32,001 TO B35,000
AND ABOVE B53,100



MODEL 90
WITH 2- TYPE 47 TUBES
SERIAL No. 32,001 TO B35,000 AND ABOVE B53,100

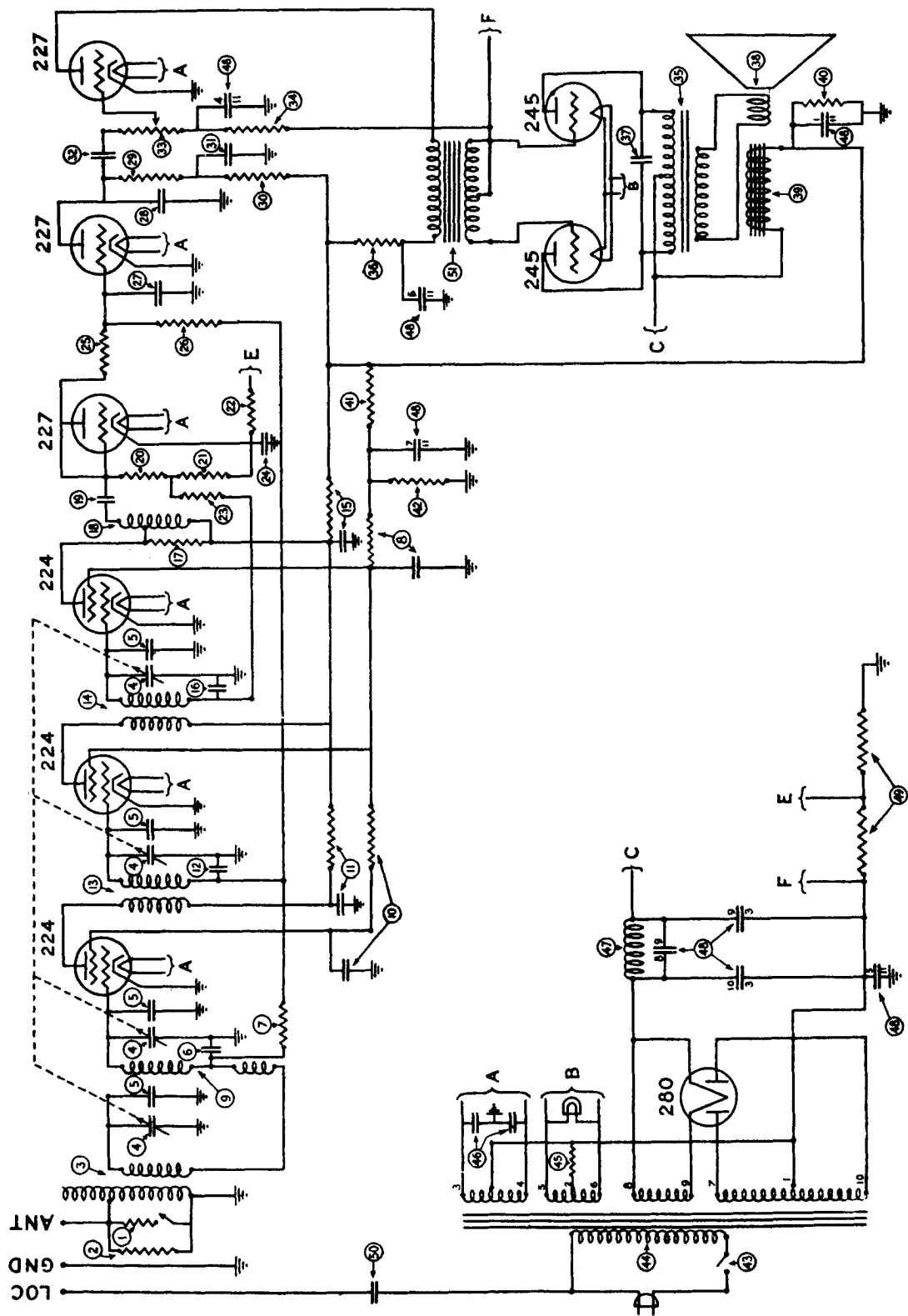


MODEL 90 REPLACEMENT PARTS

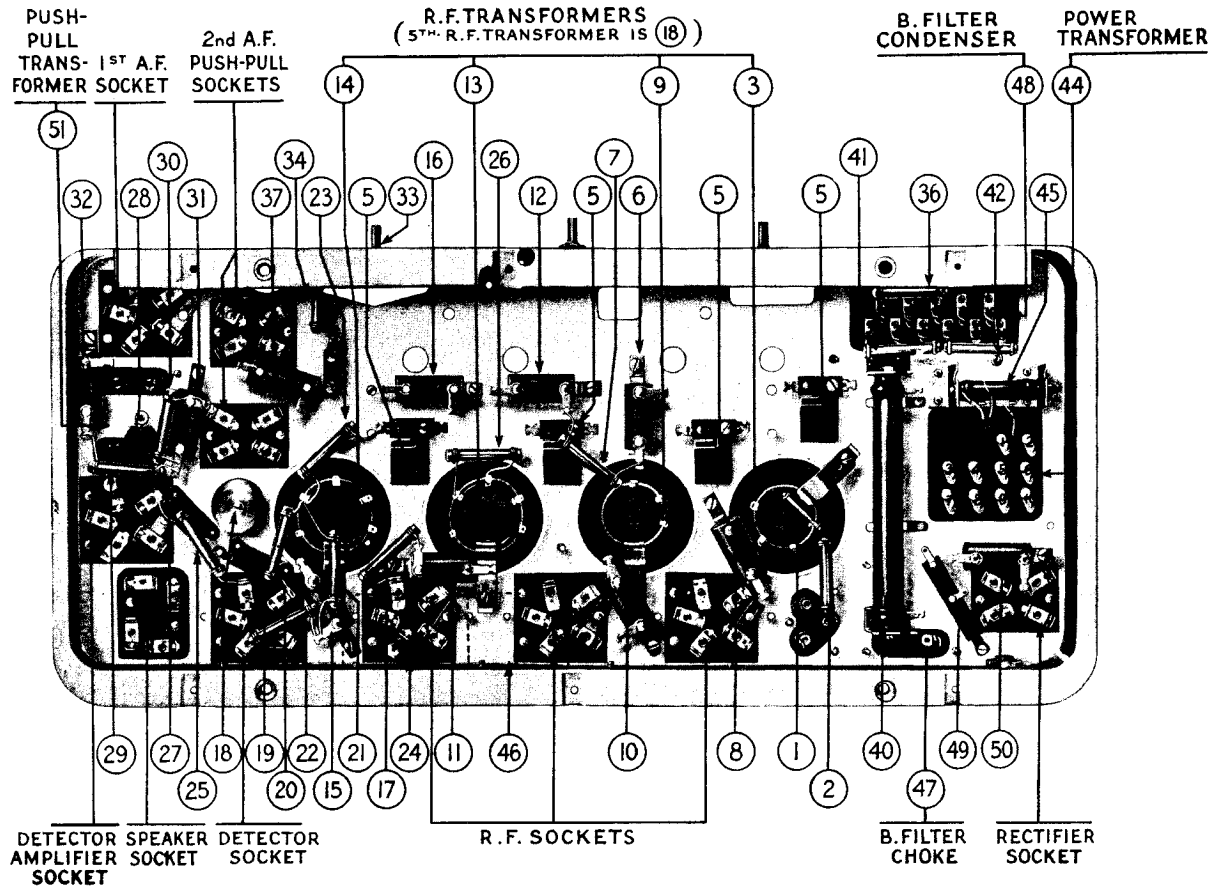
No. on Figs. 1 and 2	Description	Part No.	No. on Figs. 1 and 2	Description	Part No.
①	Resistor (10,000 Ohms)	4412	②③	Resistor (25,000 Ohms)	4409
②	Antenna Transformer	04317	③④	Resistor (25,000 Ohms)	4409
③	Resistor (1,000,000 Ohms)	4409	⑤	Condenser (.01 Mfd.)	3903-X
④	Tuning Condenser (50-60 cycles)	04309	⑥	Resistor (1,000,000 Ohms)	4409
	Tuning Condenser (25-40 cycles)	04310	⑦	Tone Control	03137
⑥	Compensating Condenser—Antenna— Part of Tuning Condenser Assembly		⑧	Resistor (51,000 Ohms)	4518
⑧	Condenser (.05 Mfd.)	3615-L	⑨	Push-Pull Input Transformer	6064
⑦	Condenser (.09 Mfd. and 200 Ohm Re- sistor)	4989-L	⑩	Condenser (1,000 Mmf.) *	5215
⑧	Detector Transformer	04408	⑪	Push-Pull Output Transformer	2635
⑨	Condenser (.09 Mfd.)	3615-AJ	⑫	Voice Coil and Cone Assembly	02874
⑩	Compensating Condenser—Detector— Part of Tuning Condenser Assembly		⑬	Speaker Field Assembled with Pot	02892
⑪	Compensating Condenser—Coupling	04000-M	⑭	Pilot Light	3463
⑫	Oscillator Coil	04409	⑮	Condenser (.015 Mfd. Double)	3793-E
⑬	Condenser (700 Mmf.)	4520	⑯	On-Off Switch	4095
⑭	Resistor (15,000 Ohms)	6208	⑰	Power Transformer (50-60 cycles)	6072
⑮	Compensating Condenser—Low Frequency	04000-B		Power Transformer (25-40 cycles)	6073
⑯	Condenser (410 Mfd.)	5120		Power Transformer (50-60 cycles, 230 volts)	6074
⑰	Compensating Condenser—High Fre- quency—Part of Tuning Condenser Assembly		⑱	Electrolytic Condenser (6 Mfd.) 50-60 cycles	4916
⑱	First I.F. Transformer	04319	⑳	Filter Choke	4819
⑲	Compensating Condenser—First I.F.	04000-M	㉑	Condenser (.15 Mfd.)	6287-B
⑳	Resistor (1,000,000 Ohms)	4409	㉒	Condenser (6 Mfd.)	4916
㉑	Resistor (1,000 Ohms)	4590	㉓	B. C. Resistor	6071
㉒	Compensating Condenser—Second I.F. Primary	04000-M		Tube Shield	04311
㉓	Condenser (2-.25, 2-.5 Mfd.)	04407		Knob (Large)	03063
㉔	Second I.F. Transformer	04320		Knob (Small)	03064
㉕	Resistor (99,000 Ohms)	4411		Knob (Switch)	03437
㉖	Volume Control	6015		Knob Spring (Large)	5262
㉗	Compensating Condenser (Second I.F. Secondary)	04000-M		Knob Spring (Small)	4147
㉘	Condenser (110 Mmf.)	4519		Grid Clip	4897
㉙	Condenser (110 Mmf.)	4519		Two-Prong Socket Assembly	4956
㉚	Condenser (.01 Mfd.)	3903-N		Four-Prong Socket Assembly	5026
㉛	Resistor (1,000,000 Ohms)	4517		Dial Complete	03031
㉜	Resistor (490,000 Ohms)	4516		Bezel	5311
				Chassis Mounting Screw (2 Used)	W-664
				Chassis Mounting Screw (2 Used)	W-567
				Mounting Washer	5058
				Rubber Washer	5189

* This item omitted on later production.

Philco Model 95



Philco Model 95



Replacement Parts for Model 95

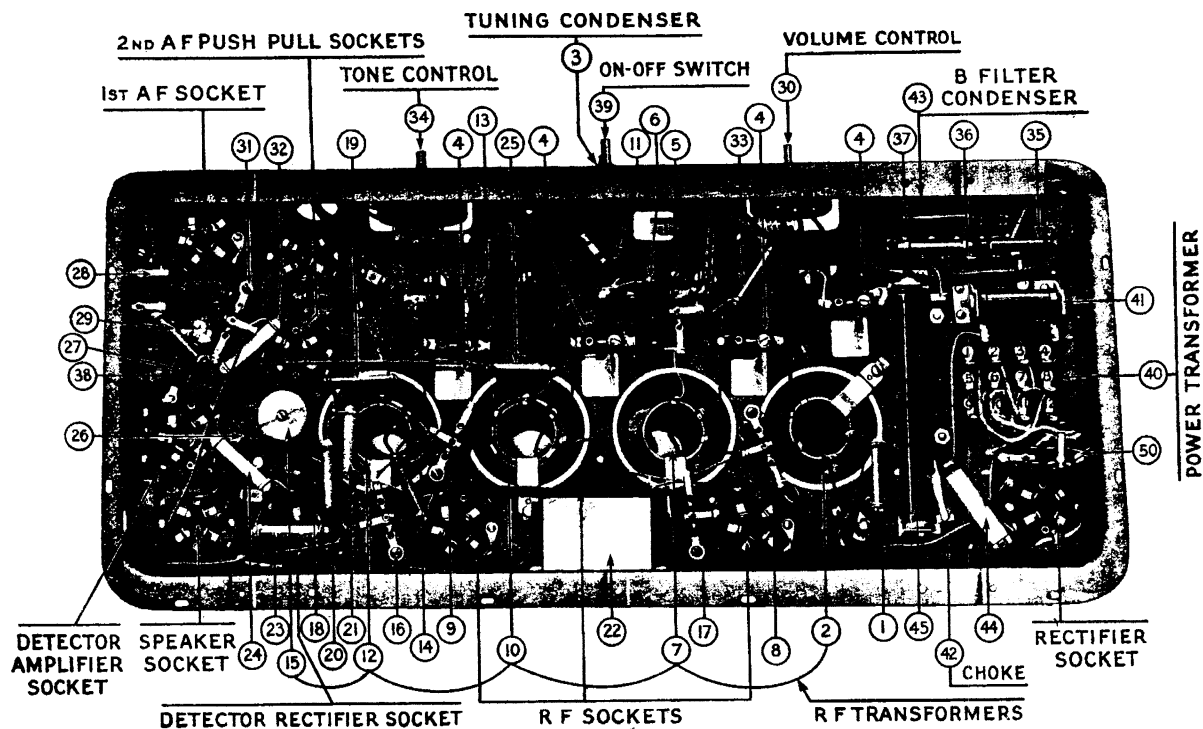
NUMBER FROM DIAGRAM

FACTORY PART NO.

①	Resistor	3777	②③	Resistor	3769
②	Resistor	3526	②④	Resistor	3768
③	1st R. F. Transformer	3744-A	③①	Condenser	3584-B
④	Tuning Condenser	3376-D	③②	Condenser	3788-A
⑤	Compensating Condenser	3772-A	③③	Resistor (Volume Control)	3790
⑥	Condenser	3788-A	③④	Resistor	3542
⑦	Resistor	3542	③⑤	Push-Pull Output Transformer	2848
⑧	Condenser	3584-C	③⑥	Resistor	3656
⑨	2d R. F. Transformer	3744-B	③⑦	Condenser	3788-A
⑩	Condenser and Resistor	3787-A	③⑧	Speaker Cone and Voice Coil	2814-B
⑪	Condenser and Resistor	3787-A	③⑨	Field Coil	2850
⑫	Condenser	3788-A	④①	Resistor	3762
⑬	3d R. F. Transformer	3744-C	④②	Resistor	3766
⑭	4th R. F. Transformer	3744-C	④③	Resistor	3542
⑮	Condenser	3584-B	④④	On-Off Switch	3517
⑯	Condenser	3788-A	④⑤	Power Transformer	3752
⑰	Resistor	3766	④⑥	Resistor	3763
⑱	5th R. F. Transformer	3775-B	④⑦	Condenser (Filament By-Pass)	3557
⑲	Condenser	3774	④⑧	Choke	3422
⑳	Resistor	3767	④⑨	B Filter Condenser	3754
㉑	Resistor	3767	④⑩	Resistor	3764
㉒	Resistor	3769	④⑪	Condenser for "Loc" Terminal	3788-A
㉓	Resistor	3583	④⑫	Push-Pull Input Transformer	3537
㉔	Resistor	3768	④⑬	Local-Distance Switch	3773
㉕	Resistor	3769	④⑭	Pilot Lamp	3463
㉖	Condenser	3082	④⑮	Oscillator Kit	3540
㉗	Condenser	3082	④⑯	Cabinet Touch-up Kit	3808

SPEAKER PLUG AND SOCKET CONNECTIONS SHOWN —O—

Philco Model 96



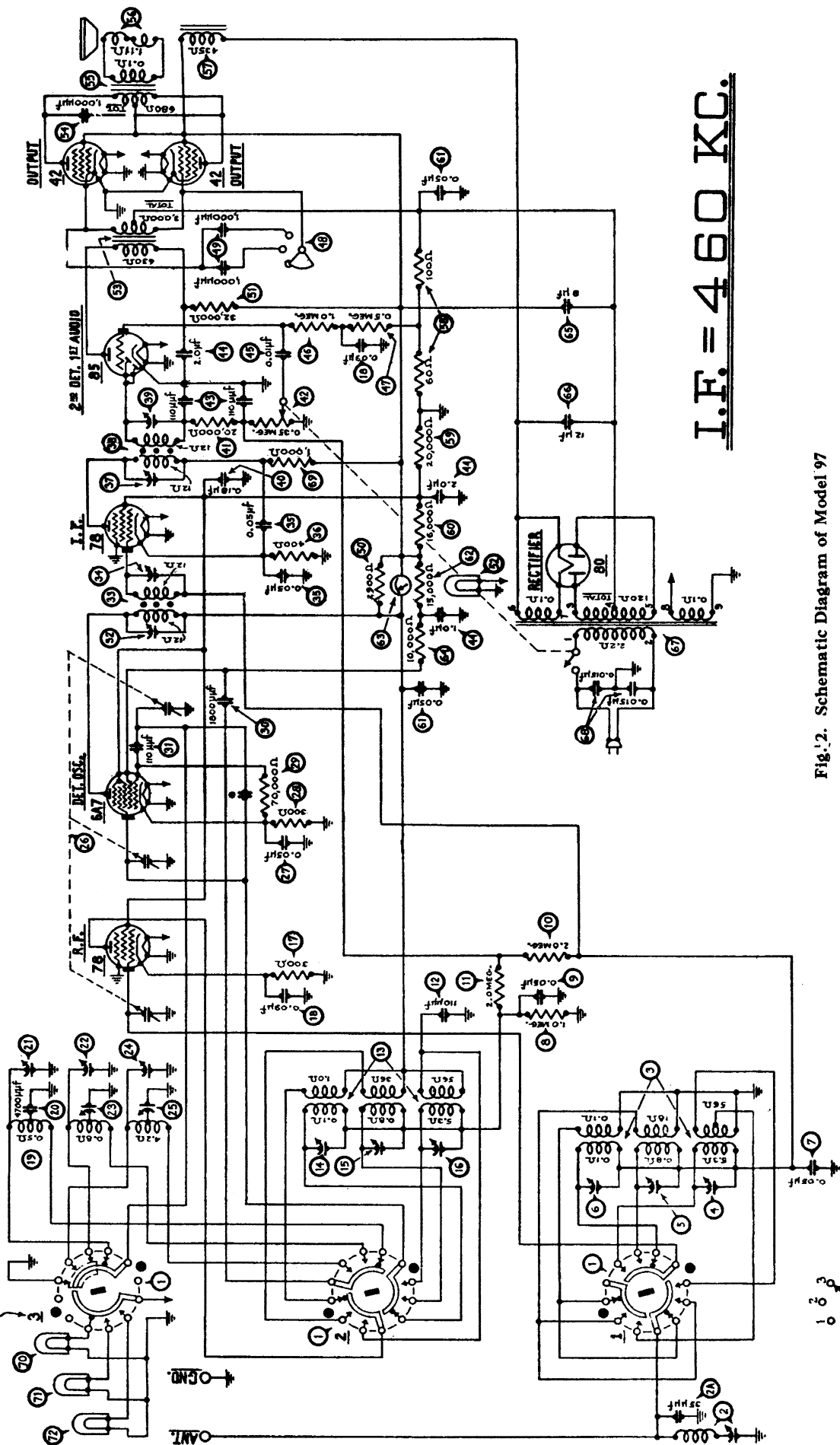
Replacement Parts for Model 96

	Description	Part No.		Description	Part No.
①	Antenna Resistor	3526	③⑥	Volume Control	4093
②	First R. F. Transformer	3744-A	③①	By-Pass Condenser	3615-D
③	Tuning Condenser	4000-D	③②	Resistor	3768
④	Compensating Condenser	3772-A	③③	Resistor	3542
⑤	By-Pass Condenser	3615-F	③④	Tone Control	4037-A
⑥	Resistor	3542	③⑤	Resistor	3542
⑦	Second R. F. Transformer	3744-B	③⑥	Resistor	3766
⑧	By-Pass Condenser and Resistor	3615-C	③⑦	Resistor	3656
⑨	By-Pass Condenser and Resistor	3615-B	③⑧	Input Transformer	3537
⑩	Third R. F. Transformer	3744-C	③⑨	On-Off Switch	4095
⑪	By-Pass Condenser	3615-E	④①	Power Transformer (60 Cycle)	3752
⑫	Fourth R. F. Transformer	3744-C	④②	Power Transformer (25 Cycle)	3753
⑬	By-Pass Condenser	3615-E	④③	C Resistor	3763
⑭	Resistor	3766	④④	Choke	3422
⑮	Fifth R. F. Transformer	3775-B	④⑤	Filter Condenser (60 Cycle)	3754
⑯	By-Pass Condenser and Resistor	3615-B	④⑥	Filter Condenser (25 Cycle)	3755
⑰	By-Pass Condenser and Resistor	3615-C	④⑦	Resistor	3764
⑱	Condenser	3774	④⑧	B Resistor	3762
⑲	Resistor	3769	④⑨	Out-Put Transformer	2848
⑳	Resistor	3767	④⑩	Field Coil	2850
㉑	Resistor	3767	④⑪	Voice Coil and Cone	2794-B
㉒	By-Pass Condenser	3583	④⑫	Pilot Lamp	3463
㉓	Resistor	3767	④⑬	Condenser (LOC)	3793-B
㉔	Resistor	3768		Knob (Vol. Control)	3579
㉕	Resistor	3769		Knob (Tuning Condenser)	3580
㉖	By-Pass Condenser	3082		Dial Indicator	4006
㉗	By-Pass Condenser	3082		Scale	4118
㉘	Condenser	3793-C		Speaker Plug and Cable (Short)	L-1101-A
㉙	Resistor	3769		Speaker Plug and Cable (Long)	L-1102-A

NOTE: The first two Compensating Condensers ① are 3772-A; the third and fourth Condensers are 3968-A.

MODEL 97

NOTE: FIGURES INDICATE RELATIVE POSITIONS OF SWITCH SECTIONS FROM FRONT OF CHASSIS

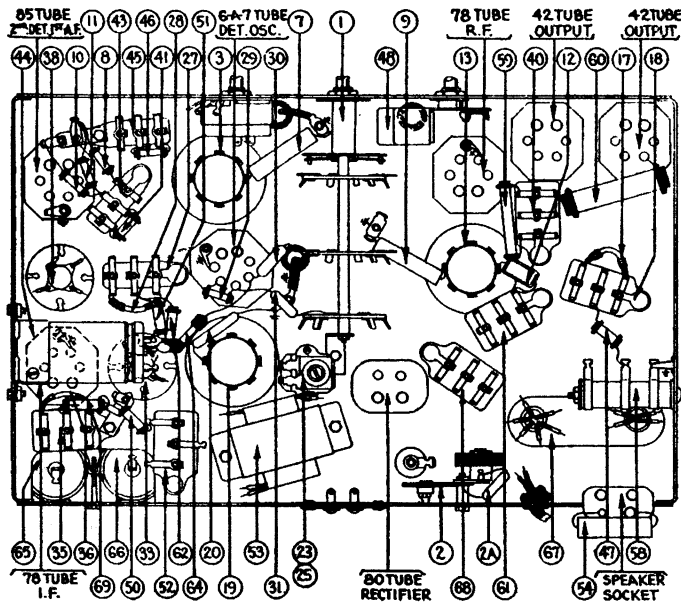


NOTE: ALL SWITCH SECTIONS SHOWN IN POSITION NO. 3

Fig. 2. Schematic Diagram of Model 97

NOTE: Condenser marked with an asterisk (*) is not a separate part, but simply a capacity obtained by two wires twisted together.

Replacement Parts—Model 97



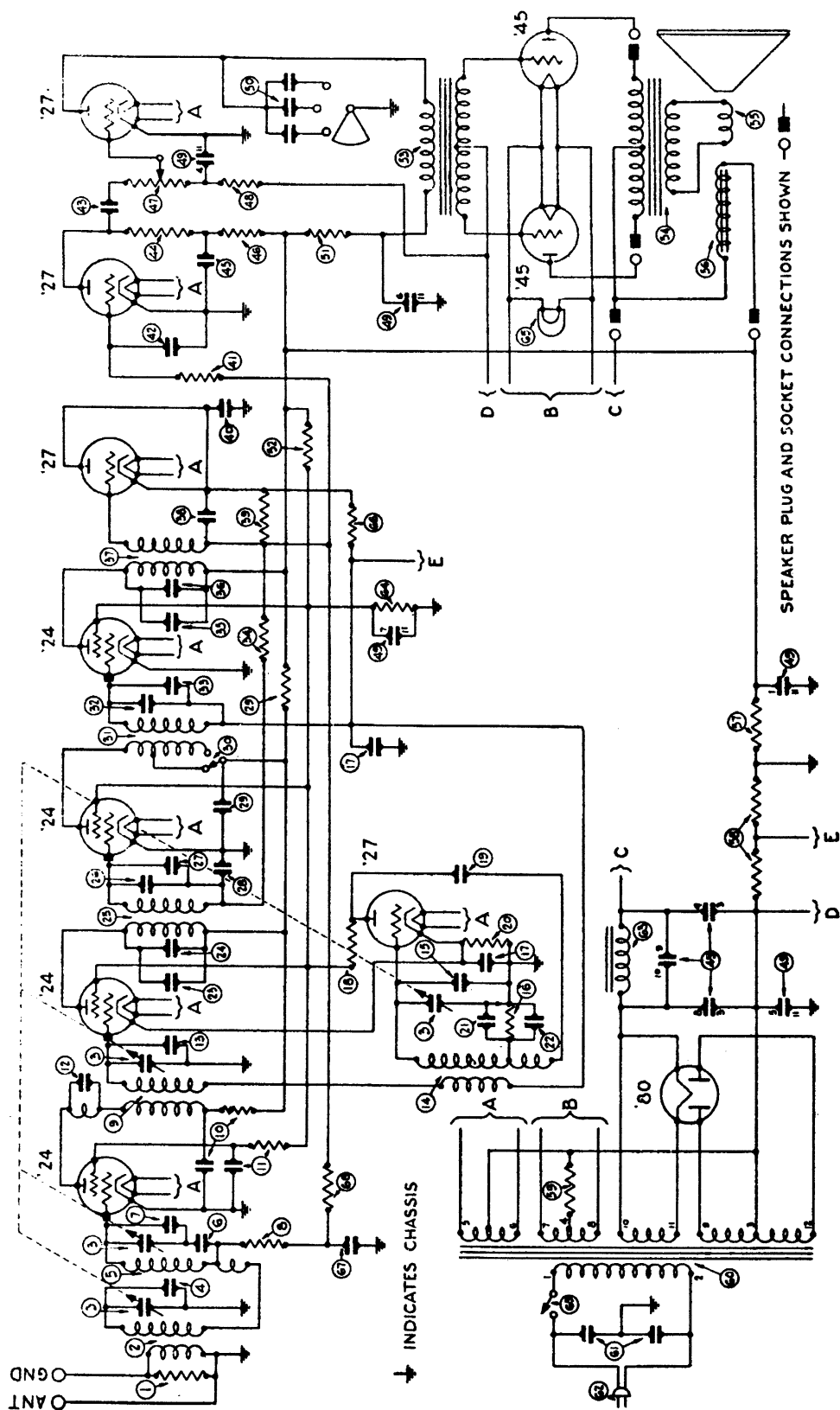
Description	Part No.
① Waveband Switch.....	42-1104
② Wavetrap.....	38-6718
②a Condenser (.000035 Mfd. Mica).....	30-1044
③ Antenna Transformer.....	32-1635
④ Compensating Condenser (Antenna, Standard).....	Part of ③
⑤ Compensating Condenser (Antenna, Police Band).....	Part of ③
⑥ Compensating Condenser (Antenna, Short Wave).....	Part of ③
⑦ Condenser (.05 Mfd. Tubular).....	30-4020
⑧ Resistor (1 Meg.) (Brown, Black, Green).....	33-1096
⑨ Condenser (.05 Mfd. Tubular).....	30-4020
⑩ Resistor (2 Meg.) (Red, Black, Green).....	33-1172
⑪ Resistor (2 Meg.) (Red, Black, Green).....	33-1172
⑫ Condenser (.00011 Mfd. Mica).....	30-1031
⑬ R.F. Transformer.....	32-1636
⑭ Compensating Condenser (R.F., Short Wave).....	Part of ⑬
⑮ Compensating Condenser (R.F., Police Band).....	Part of ⑬
⑯ Compensating Condenser (R.F., Standard).....	Part of ⑬
⑰ Resistor (300 ohms Flexible) (Orange, Black, Brown).....	33-3010
⑱ Condenser (.09 Mfd. Twin Bakelite Block).....	4989-DG
⑲ Oscillator Transformer.....	32-1637
⑳ Condenser (.0047 Mfd. Mica).....	30-1052
㉑ Compensating Condenser (OSC., Short Wave).....	Part of ⑱
㉒ Compensating Condenser (OSC., H.F. Police).....	Part of ⑱
㉓ Compensating Condenser (OSC., L.F. Police).....	Part of ⑱
㉔ Compensating Condenser (OSC., H.F. Standard).....	Part of ⑱
㉕ Compensating Condenser (OSC., L.F. Standard).....	Part of ⑱
㉖ Tuning Condenser Assembly.....	31-1518
㉗ Condenser (.05 Mfd. Bakelite Block).....	3615-SG
㉘ Resistor (300 ohms Flexible) (Orange, Black, Brown).....	33-3010
㉙ Resistor (70000 ohms) (Violet, Black, Orange).....	33-1164
㉚ Condenser (.0018 Mfd. Mica).....	6018

†Omitted after Run 3. Not shown in Fig. 2.

†In Model 97-A (25 cycles) this is Part No. 30-2026.

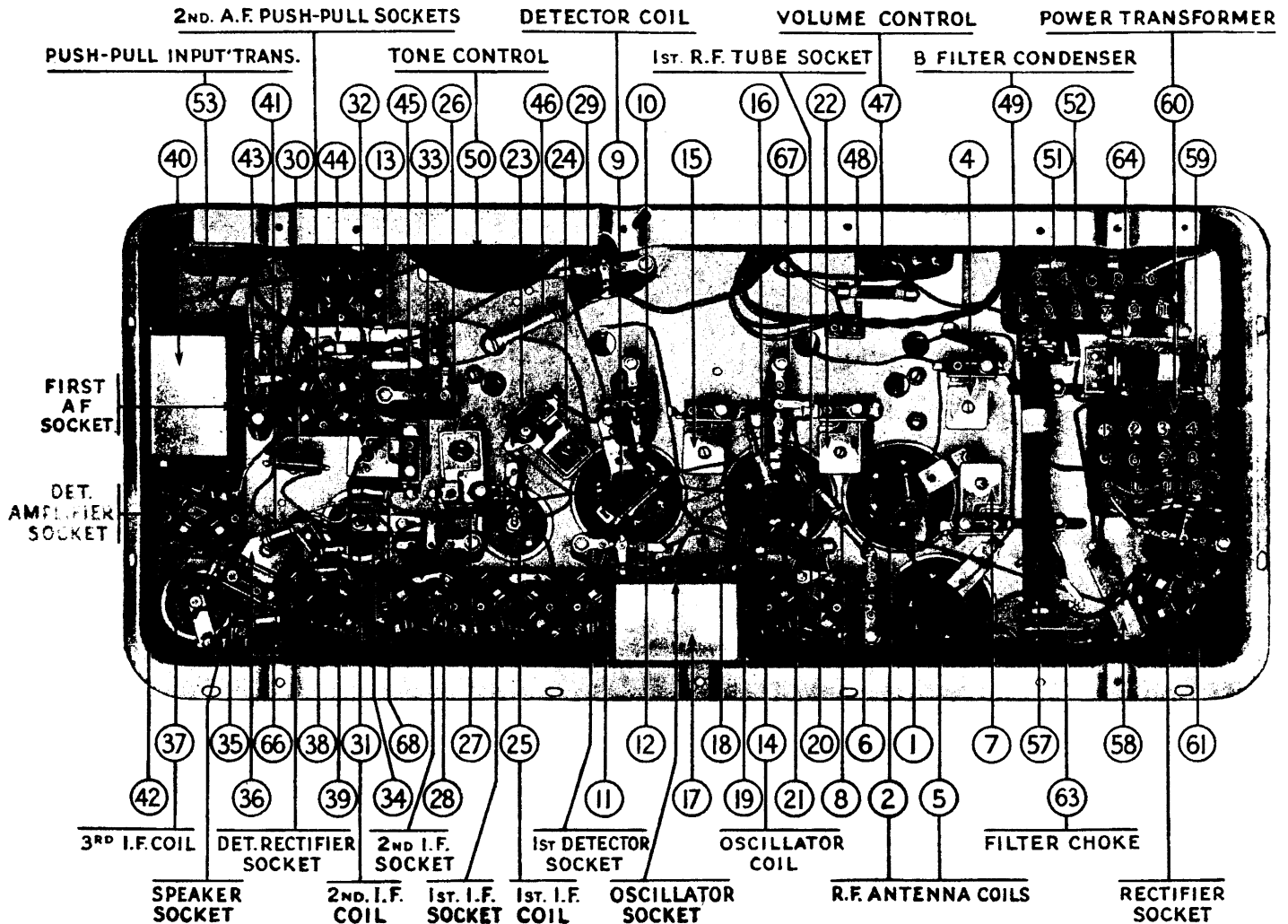
Description	Part No.
③① Condenser (.00011 Mfd. Mica).....	30-1031
③② Compensating Condenser (1st I.F. Pri.).....	Part of ③③
③③ First I.F. Transformer.....	32-1631
③④ Compensating Condenser (1st I.F. Sec.).....	Part of ③③
③⑤ Condenser (.05 Mfd. Twin Bakelite Block).....	3615-DU
③⑥ Resistor (400 ohms Flexible) (Yellow, Black, Brown).....	33-3016
③⑦ Compensating Condenser (2nd I.F. Pri.).....	Part of ③⑧
③⑧ 2nd I.F. Transformer.....	32-1632
③⑨ Compensating Condenser (2nd I.F. Sec.).....	Part of ③⑧
④⑥ Condenser (.18 Mfd. Bakelite Block).....	4989-DG
④① Resistor (20000 ohms) (Red, Black, Orange).....	33-1130
④② Volume Control (350000 ohms) & On-Off Switch.....	33-5102
④③ Condenser (.00011 Mfd. Twin Bakelite Block).....	8035-DG
④④ Condenser (Electrolytic: 2 Mfd., 2 Mfd., 1 Mfd.).....	30-2114
④⑤ Condenser (.01 Mfd. Bakelite Block).....	3903-SU
④⑥ Resistor (1 Meg.) (Brown, Black, Green).....	33-1171
④⑦ Resistor (.5 Meg.) (Yellow, White, Yellow).....	33-1169
④⑧ Tone Control.....	30-4311
④⑨ Condensers in Tone Control.....	Part of ④⑧
⑤⑥ Resistor (2900 ohms) (Red, White, Red).....	5309
⑤① Resistor (32000 ohms) (Orange, Red, Orange).....	3525
⑤② Pilot Lamp.....	Part of ⑤③
†⑤③a Condenser (.25 Mfd. Bakelite Block).....	6287-P
⑤④ Audio Transformer.....	32-7372
⑤⑤ Condenser (.001 Mfd. Tubular).....	30-4201
⑤⑥ Output Transformer (on Speaker).....	2585
⑤⑦ Speaker Cone & Voice Coil Assembly {K-31 36-3174 H-21 02625	
⑤⑧ Speaker Field Coil..... {K-31 36-3463 H-21 36-3461	
⑤⑨ B-C Resistor (Wire-Wound 100 ohm, 60 ohms).....	33-3208
⑥⑥ Resistor (20000 ohms) (Red, Black, Orange).....	33-1130
⑥⑦ Resistor (16000 ohms) (Brown, Blue, Orange).....	33-1201
⑥⑧ Condenser (.05 Mfd. Twin Bakelite Block).....	3615-DG
⑥⑨ Resistor (15000 ohms) (Brown, Green, Orange).....	6208
⑥⑩ Shadow Tuning Meter.....	45-2028
⑥⑪ Resistor (10000 ohms) (Brown, Black, Orange).....	4412
†⑥⑫ Condenser (Electrolytic—8 Mfd.).....	30-2025
†⑥⑬ Condenser (Electrolytic—12 Mfd.).....	30-2117
⑥⑭ Power Transformer, 115 Volts, 60 Cycles.....	32-7369
115 Volts, 25 Cycles.....	32-7370
230 Volts, 60 Cycles.....	32-7371
⑥⑮ Condenser (.015 Mfd. Twin Bakelite Block).....	3793-DG
⑥⑯ Resistor (1000 ohms) (Brown, Black, Red).....	5837
⑦⑥ Dial Lamp (Standard Band).....	34-2031
⑦⑦ Dial Lamp (Police Band).....	34-2031
⑦⑧ Dial Lamp (Short-wave Band).....	34-2031
⑦⑨ Dial Assembly.....	31-1513
Knob (Tone Control, Volume Control).....	27-4052
Knob (Waveband).....	27-4051
Knob (Station Selector).....	27-4139
Knob (Fine Tuning).....	27-4140
Tube Shield Body.....	28-1107
Tube Shield Base.....	28-1110
Pilot Lamp Assembly.....	38-6075
4 Prong Tube Socket.....	27-6006
6 Prong Tube Socket.....	27-6020
7 Prong Tube Socket.....	27-6012
Electric Cord and Plug.....	L-943A
Speaker Socket.....	27-6018
Chassis Mtg. Screw (97-X).....	W-1345-A
Chassis Mtg. Screw (97-B).....	W-1346-A
Chassis Mtg. Foot (Rubber).....	27-4116
Chassis Mtg. Foot Plate.....	27-7497
Chassis Mtg. Washer.....	29-2089
Bezel.....	27-4120

MODELS 111 AND 111-A



NOTE: The connection shown between Condenser No. ⑦ and Condenser No. ① should also be connected to ground.

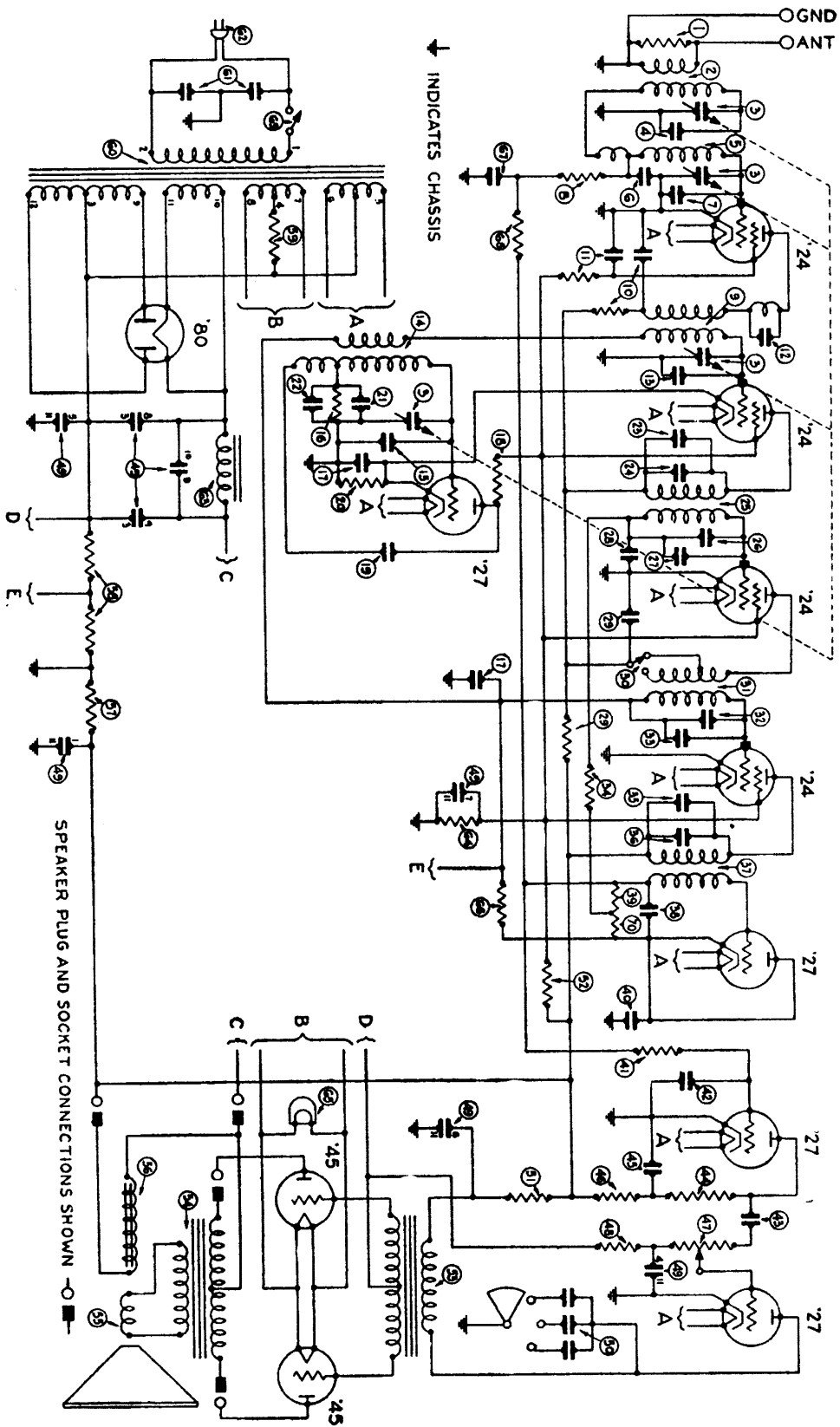
Models 111 and 111-A



REPLACEMENT PARTS

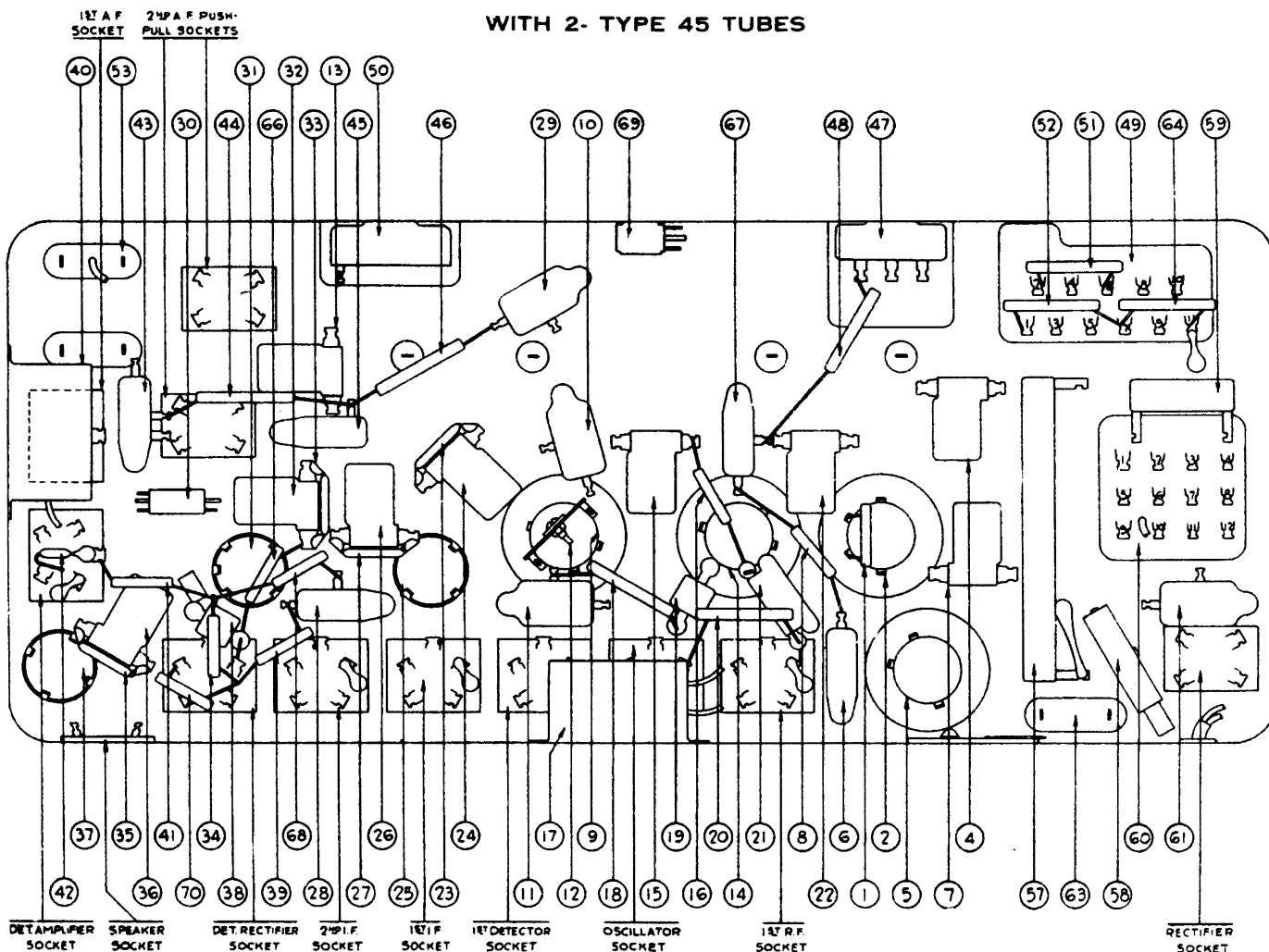
No. on Figs. 3 and 4	Description	Part No.	No. on Figs. 3 and 4	Description	Part No.
①	Resistor—10,000 Ohms	4412	⑤	Condenser—.5	3583
②	1st R. F. Coil	3884-J	⑥	Resistor—100,000 Ohms	4411
③	Tuning Condenser	4000-D	⑦	Condenser—.00025	3082
④	Compensating Condenser	3772-A	⑧	Condenser—.015	3793-B
⑤	2nd R. F. Coil	3884-T	⑨	Resistor—500,000 Ohms	3769
⑥	Condenser—.05	3615-L	⑩	Condenser—.05	3615-S
⑦	Compensating Condenser	3968-A	⑪	Resistor—250,000 Ohms	3768
⑧	Resistor—100,000 Ohms	4411	⑫	Volume Control	4093
⑨	1st Detector Coil	3884-V	⑬	Resistor—70,000 Ohms	3542
⑩	Condenser—.05 and 250 Ohms	3615-C	⑭	B Filter Condenser Block—60 cycles	3754
⑪	Condenser—.05 and 250 Ohms	3615-C	⑮	B Filter Condenser Block—25 cycles	3755
⑫	Coupling Condenser	3892-A	⑯	Tone Control	4037-A
⑬	Compensating Condenser	3968-A	⑰	Resistor—25,000 Ohms	3656
⑭	Oscillator Coil	3884-U	⑱	Resistor—25,000 Ohms	3656
⑮	Compensating Condenser	3968-A	⑲	Push-pull Input Transformer	3537
⑯	Resistor—50,000 Ohms	4518	⑳	Push-pull Output Transformer	2848
⑰	Condenser—.25 double	3557	㉑	Voice Coil and Cone Assembly	2794-B
⑱	Resistor—13,000 Ohms	3766	㉒	Field Coil	2850
⑲	Condenser—.00011	4519	㉓	B Resistor—10,000 Ohms	4532
⑳	Resistor—1,000 Ohms	4590	㉔	C Resistor	3764
㉑	Condenser—.0007	4520	㉕	C Resistor—800 Ohms	3763
㉒	Compensating Condenser	3772-B	㉖	Power Transformer—60 cycles	4446
㉓	Condenser—.00011	4519	㉗	Power Transformer—25 cycles	4447
㉔	Compensating Condenser	3772-C	㉘	Condenser—.015 double	3793-E
㉕	1st I. F. Coil	4501-B	㉙	A C Cord and Plug	L-943-A
㉖	Compensating Condenser	3772-C	㉚	Filter Choke	3422
㉗	Condenser—.0001	4519	㉛	Resistor—70,000 Ohms	3542
㉘	Condenser—.05	3615-J	㉜	Pilot Lamp	3463
㉙	Condenser—.05 and 250 Ohms	3615-B	㉝	Resistor—100,000 Ohms	4411
㉚	Range Switch	3116	㉞	Condenser—.05	3615-D
㉛	2nd I. F. Coil	4501-C	㉟	Resistor—100,000 Ohms	4411
㉜	Compensating Condenser	3772-C	㊱	On-Off Switch	4095
㉝	Condenser—.00011	4519	㊲	Insulator for Part Nos. 3557-3583	4105
㉞	Resistor—500,000 Ohms	4517	㊳	Pilot Bracket Assembly	4027-A
㉟	Condenser—.00005	4587	㊴	Bolt for Pilot Bracket Assembly	W-439
㊱	Compensating Condenser	3772-D	㊵	Tone Control Nut	W-434
㊲	3rd I. F. Coil	4501-D	㊶	By-pass Condenser Mounting Bolt	W-443
㊳	Condenser—.00011	4519	㊷	Bottom Shield Bolt	W-453
㊴	Resistor—100,000 Ohms	4411	㊸	Chassis Mounting Bolt	W-468

MODELS 112 AND 112-A WITH 2- TYPE 45 TUBES



MODELS 112 AND 112-A

WITH 2- TYPE 45 TUBES



REPLACEMENT PARTS

No. on
Figs. 3 and 4

No. on Figs. 3 and 4	Description
①	Resistor—10,000 Ohms
②	1st R. F. Coil
③	Tuning Condenser
④	Compensating Condenser
⑤	2nd R. F. Coil
⑥	Condenser—.05
⑦	Compensating Condenser
⑧	Resistor—100,000 Ohms
⑨	1st Detector Coil
⑩	Condenser—.05 and 250 Ohms
⑪	Condenser—.05 and 250 Ohms
⑫	Coupling Condenser
⑬	Compensating Condenser
⑭	Oscillator Coil
⑮	Compensating Condenser
⑯	Resistor—50,000 Ohms
⑰	Condenser—.25 double
⑱	Resistor—13,000 Ohms
⑲	Condenser—.00011
⑳	Resistor—1,000 Ohms
㉑	Condenser—.0007
㉒	Compensating Condenser
㉓	Condenser—.00011
㉔	Compensating Condenser
㉕	1st I. F. Coil
㉖	Compensating Condenser
㉗	Condenser—.0001
㉘	Condenser—.05
㉙	Condenser—.05 and 250 Ohms
㉚	Range Switch
㉛	2nd I. F. Coil
㉜	Compensating Condenser
㉝	Condenser—.00011
㉞	Resistor—500,000 Ohms
㉟	Condenser—.00005
㊱	Compensating Condenser
㊲	3rd I. F. Coil
㊳	Condenser—.00011
㊴	Resistor—50,000 Ohms

Part No.

4412
3884-J
4000-D
3772-A
3884-T
3615-L
3968-A
4411
3884-V
3615-C
3615-C
3892-A
3968-A
3884-U
3968-A
4518
3557
3766
4519
4580
4520
3772-B
4519
3772-C
4501-B
3772-C
4519
3615-J
3615-B
3116
4501-C
3772-C
4519
4517
4587
3772-D
4501-D
4519
4518

No. on
Figs. 3 and 4

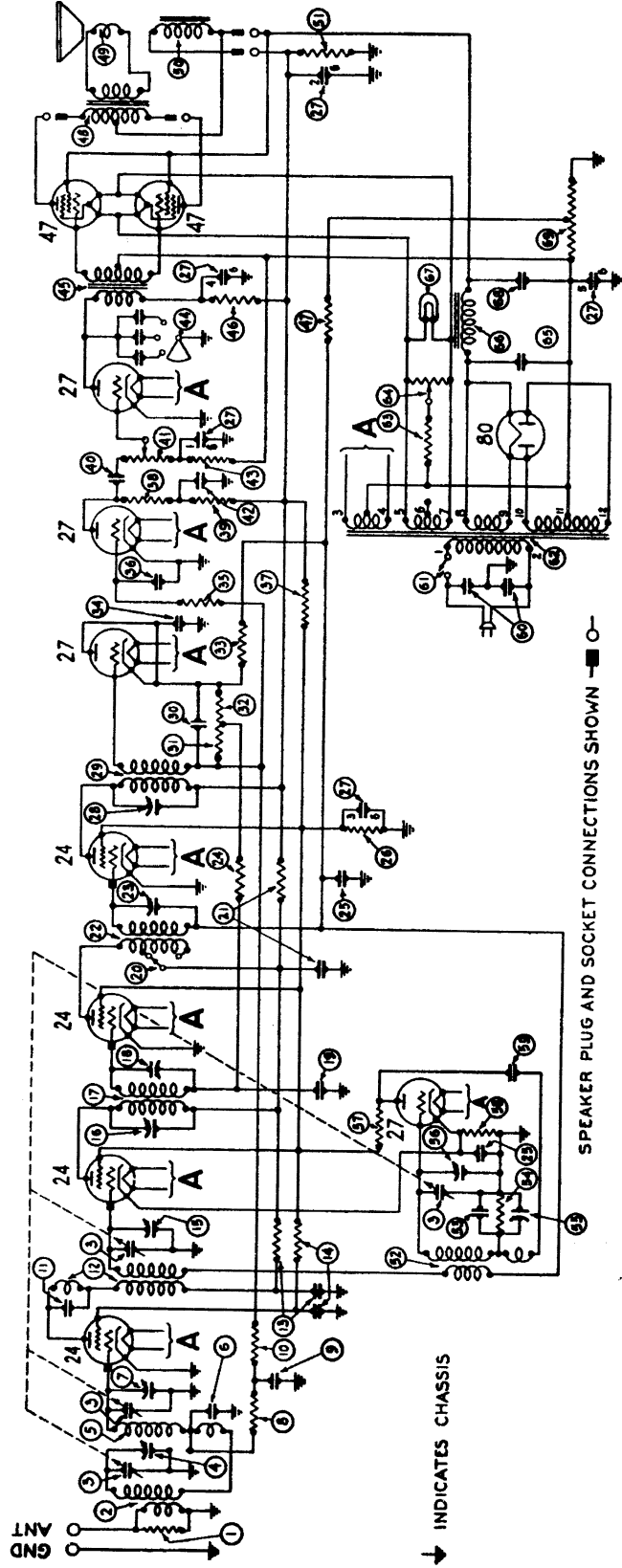
No. on Figs. 3 and 4	Description
㊵	Condenser—.5
㊶	Resistor—100,000 Ohms
㊷	Condenser—.00025
㊸	Condenser—.015
㊹	Resistor—500,000 Ohms
㊺	Condenser—.05
㊻	Resistor—250,000 Ohms
㊼	Volume Control
㊽	Resistor—70,000 Ohms
㊾	B Filter Condenser Block—60 cycles
㊿	B Filter Condenser Block—25 cycles
1	Tone Control
2	Resistor—25,000 Ohms
3	Resistor—25,000 Ohms
4	Push-pull Input Transformer
5	Push-pull Output Transformer
6	Voice Coil and Cone Assembly
7	Field Coil
8	B Resistor—10,000 Ohms
9	C Resistor
10	C Resistor—800 Ohms
11	Power Transformer—60 cycles
12	Power Transformer—25 cycles
13	Condenser—.015 double
14	A C Cord and Plug
15	Filter Choke
16	Resistor—70,000 Ohms
17	Pilot Lamp
18	Resistor—100,000 Ohms
19	Condenser—.05
20	Resistor—100,000 Ohms
21	On-Off Switch
22	Resistor 50,000 Ohms
23	Insulator for Part Nos. 3557-3583
24	Pilot Bracket Assembly
25	Bolt for Pilot Bracket Assembly
26	Tone Control Nut
27	By-pass Condenser Mounting Bolt
28	Bottom Shield Bolt
29	Chassis Mounting Bolt

Part No.

3583
4411
3082
3793-B
3769
3615-S
3768
4093
3542
3754
3755
1037-A
3656
3656
3537
2848
2794-B
2850
4532
3764
3763
4446
4447
3793-E
1-943-A
3422
3542
3463
4411
3615-D
4411
4095
4518
4105
4027-A
W-439
W-431
W-443
W-453
W-468

MODELS 112 AND 112-A (Above Serial No. 174,001)

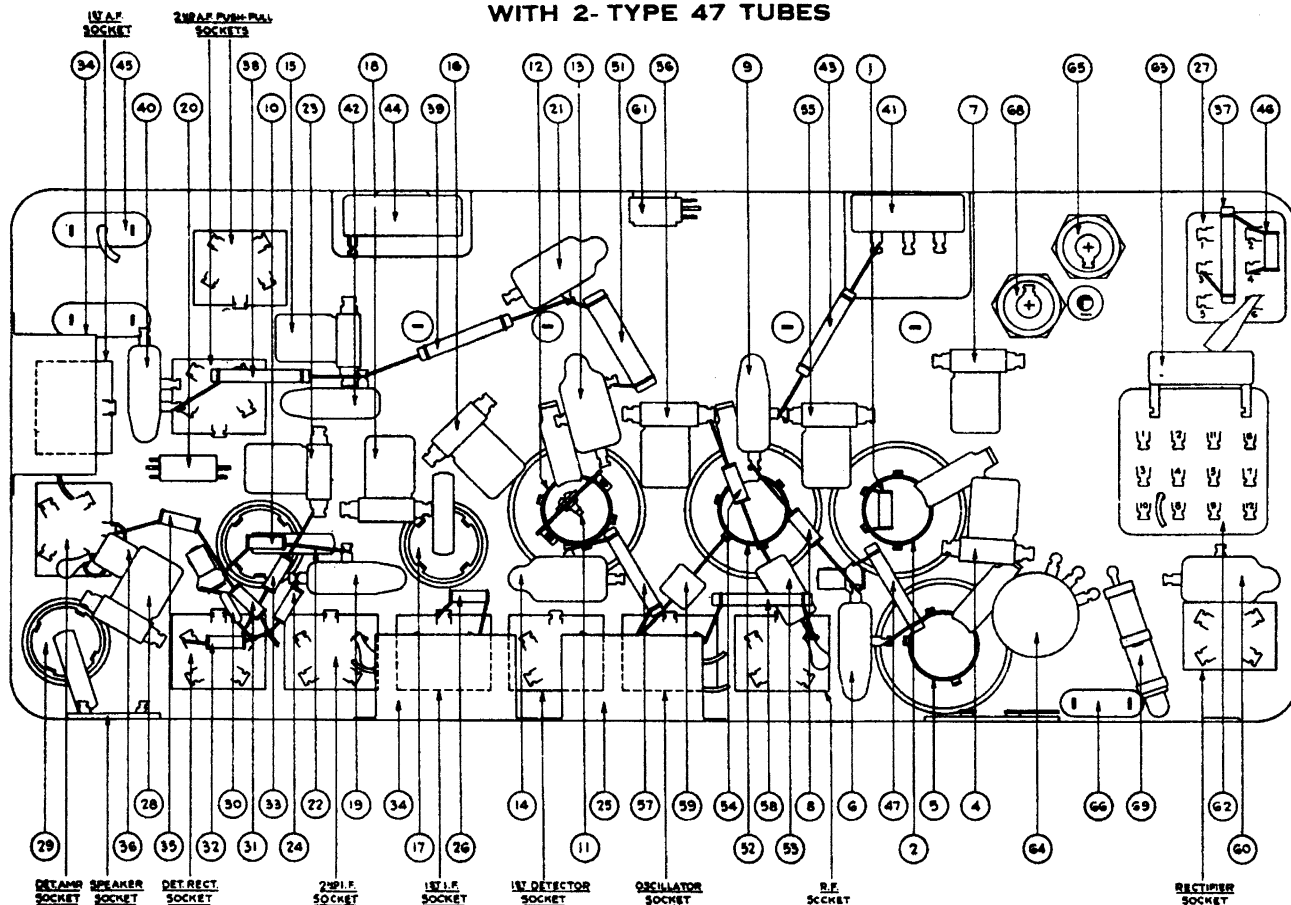
WITH 2- TYPE 47 TUBES



MODELS 112 AND 112-A

(Above Serial No. 174,001)

WITH 2- TYPE 47 TUBES



REPLACEMENT PARTS—MODELS 112, 112-A

(Above Serial No. 174,001)

No. on Figs. 3 and 4	Description	Part No.
①	Resistor (10,000 ohms)	4412
②	First R. F. Coil	3884-S
③	Tuning Condenser	4000-D
④	Compensating Condenser	04000-E
⑤	Second R. F. Coil	3884-T
⑥	By-pass Condenser (.05 mfd.)	3615-J
⑦	Compensating Condenser	04000-D
⑧	Resistor (99,000 ohms)	4411
⑨	By-pass Condenser (.05 mfd.)	3615-D
⑩	Resistor (99,000 ohms)	4411
⑪	Condenser	3892-A
⑫	First Detector Coil	3884-V
⑬	By-pass Condenser & Resistor (.05 mfd. and 250 ohms)	3615-Z
⑭	By-pass Condenser & Resistor (.05 mfd. and 250 ohms)	3615-B
⑮	Compensating Condenser	04000-E
⑯	Compensating Condenser	04000-J
⑰	First I. F. Transformer	03038
⑱	Compensating Condenser	04000-J
⑲	By-pass Condenser (.05 mfd.)	3615-J
⑳	Range Switch	3118
㉑	By-pass Condenser & Resistor (.05 mfd. and 250 ohms)	3615-B
㉒	Second I. F. Transformer	03039
㉓	Compensating Condenser	04000-J
㉔	Resistor (490,000 ohms)	4517
㉕	By-pass Condenser (1/4 mfd.)	3657
㉖	Resistor (70,000 ohms)	5385
㉗	Filter Condenser Block (50-60 cycles)	03489
㉘	Filter Condenser Block (25-40 cycles)	03589
㉙	Compensating Condenser	04000-L
㉚	Third I. F. Transformer	03040
㉛	Condenser (110 mmf.)	4519
㉜	Resistor (51,000 ohms)	4518
㉝	Resistor (51,000 ohms)	4518
㉞	Resistor (99,000 ohms)	4411
㉟	By-pass Condenser (.5 mfd.) 2 used	3583
㊱	Resistor (99,000 ohms)	4411
㊲	Condenser (250 mmf.)	3082
㊳	Resistor (25,000 ohms)	3656
㊴	Resistor (99,000 ohms)	3769
㊵	Resistor (490,000 ohms)	3768
㊶	Condenser (.015 mfd.)	3793-F

No. on Figs. 3 and 4	Description	Part No.
㊷	Volume Control	4093
㊸	By-pass Condenser (.05 mfd.)	3615-S
㊹	Resistor (70,000 ohms)	3542
㊺	Tone Control	03137
㊻	Push-pull Input Transformer	5662
㊼	Resistor (25,000 ohms)	4516
㊽	Resistor (13,000 ohms)	3766
㊾	Push-pull Output Transformer	2635
㊿	Voice Coil and Cone Assembly	02997
1	Speaker Field (assembled with pot and frame)	02892
2	Resistor (15,000 ohms)	5718
3	Oscillator Coil	3884-U
4	Condenser (700 mmf.)	4520
5	Resistor (50,000 ohms)	4518
6	Compensating Condenser	04000-F
7	Compensating Condenser	04000-E
8	Resistor (13,000 ohms)	3766
9	Resistor (1,000 ohms)	4590
10	Condenser (110 mmf.)	4519
11	By-pass Condenser (.015 mfd. double)	3793-E
12	On-Off Switch	4095
13	Power Transformer (115 volts 50-60 cycles)	5594
14	Power Transformer (115 volts 25-40 cycles)	5595
15	Power Transformer (230 volts 50-60 cycles)	5596
16	Resistor (205 ohms)	03513
17	Hum Control Potentiometer	5650
18	Electrolytic Condenser (6 mfd.)	4916
19	Filter Choke	5643
20	Pilot Light	3463
21	Electrolytic Condenser (6 mfd.)	4916
22	Resistor (2 sections 70 ohms each)	3764
23	Knob (Large)	03063
24	Knob (Small)	03064
25	Knob (Switch)	03437
26	Spring (for Switch Knob)	5262
27	Spring (for Dial Knob)	4147
28	Tube Shield	03518
29	Grid Clip	4897
30	Four Prong Socket Assembly	5026
31	Five Prong Socket Assembly	4956
32	Volume Control Insulator	4286
33	Dial Scale	4276
34	Bezel	5010
35	Pilot Bracket Complete	4027-A

[illegible]

NUMBERS INDICATE RELATIVE POSITIONS OF SWITCH-
SECTIONS FROM FRONT OF CHASSIS

I.F.=460KC.

ALL SWITCH-SECTIONS
SHOWN
IN POSITION NO 5

Replacement Parts—Model 116 (Code 121)

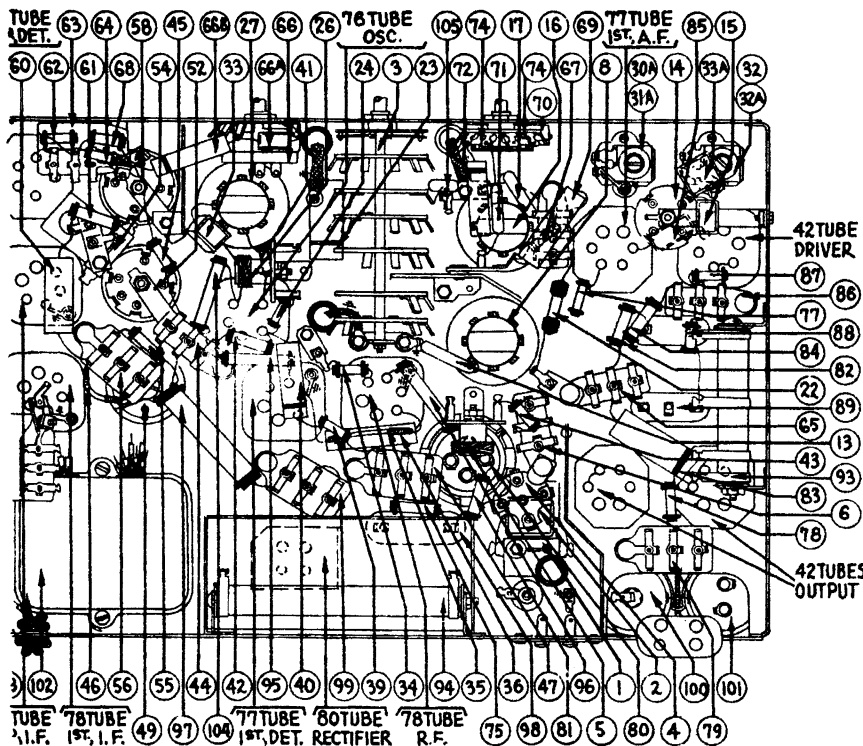


Fig. 4 Bottom View of Chassis

Description	Part No.
① Wave Trap.....	38-6889
② Condenser (.00025 Mfd. Mica).....	30-1032
③ Waveband Switch.....	42-1118
④ Transmission Line Transformer.....	32-1608
⑤ Antenna Transformer (Long Wave).....	32-1729
⑥ Condenser (.01 Mfd. Bakelite Block).....	3903-SU
⑦ Condenser (.000015 Mfd. Mica).....	330-1030
⑧ Antenna Transformer (Standard, Police, Short-wave).....	32-1735
⑨ Compensating Condenser (Ant. S.W. High Band).....	Part of ④
⑩ Compensating Condenser (Ant. S.W. Low Band).....	Part of ④
⑪ Compensating Condenser (Ant. Police).....	Part of ④
⑫ Compensating Condenser (Ant. Standard).....	Part of ④
⑬ Condenser (.003 Mfd. Mica).....	7301
⑭ R. F. Transformer (Long Wave).....	32-1730
⑮ Condenser (.00025 Mfd. Mica).....	30-1038
⑯ R. F. Transformer (Standard, Police, S.W.).....	32-1468
⑰ Condenser (.002 Mfd. Mica).....	30-1042
⑱ Compensating Condenser (R.F. Shortwave (High Band).....	Part of ④
⑲ Compensating Condenser (R.F. Shortwave (Low Band).....	Part of ④
⑳ Compensating Condenser (R.F. Police).....	Part of ④
㉑ Compensating Condenser (R.F. Standard).....	Part of ④
㉒ Resistor (1000 ohms) (Brown-Black-Red).....	5837
㉓ Condenser (.05 Mfd. Tubular).....	30-4123
㉔ Resistor (25000 ohms) (Red-Green-Orange).....	33-1013
㉕ Tuning Condenser Assembly.....	31-1606
㉖ Oscillator Transformer (Long Wave).....	32-1731
㉗ Oscillator Transformer (Standard, Police, Shortwave).....	32-1736
㉘ Compensating Condenser (Osc. S.W., High Band).....	Part of ④
㉙ Compensating Condenser (Osc. S.W., Low Band).....	Part of ④
㉚ Compensating Condenser (Osc. Police).....	Part of ④
㉛ Compensating Condenser (Osc. Police Series).....	Part of 31-6027
㉜ Compensating Condenser (Osc. Standard).....	Part of ④
㉝ Compensating Condenser (Osc. Standard Series).....	Part of 31-6027
㉞ Compensating Condenser (Osc. Longwave).....	31-6050
㉟ Compensating Condenser (Osc. Longwave Series).....	31-6050
㊱ Condenser (.00025 Mfd. Mica).....	5858
㊲ Condenser (.003 Mfd. Mica).....	30-1028
㊳ Resistor (70 ohms) (Violet-Black-Black).....	33-1129
㊴ Resistor (300 ohms Flexible) (Orange-Black-Brown).....	33-3010
㊵ Condenser (.05 Mfd. Tubular).....	30-4020
㊶ Condenser (.00011 Mfd. Tubular).....	*30-4340
㊷ Resistor (2 Megs.) (Red-Black-Green).....	*33-1025
㊸ Resistor (8000 ohms) (Gray-Black-Red).....	33-1114
㊹ Condenser (.00125 Mfd. Tubular).....	30-4336
㊺ Resistor (70 ohms) (Violet-Black-Black).....	33-1129
㊻ Resistor (1000 ohms) (Brown-Black-Red).....	5837
㊼ Resistor (240000 ohms) (Red-Yellow-Yellow).....	33-1097
㊽ Condenser (.05 Mfd. Bakelite Block).....	3615-SG

Description	Part No.
① Resistor (2 Megs.) (Red-Black-Green).....	33-1025
② Resistor (300 ohms Flexible) (Orange-Black-Black).....	33-3010
③ Condenser (.05 Mfd. Twin Bakelite Block).....	3615-DG
④ Compensating Condenser (1st I.F. Primary).....	Part of ④
⑤ First I.F. Transformer.....	32-1642
⑥ Compensating Condenser (1st I.F. Secondary).....	Part of ④
⑦ Compensating Condenser (2nd I.F. Primary).....	Part of 31-6028
⑧ Second I.F. Transformer.....	32-1643
⑨ Compensating Condenser (2nd I.F. Secondary).....	Part of 31-6028
⑩ Compensating Condenser (2nd I.F. Tertiary).....	04000R
⑪ Resistor (2900 ohms) (Red-White-Red).....	5309
⑫ Condenser (.05 Mfd. Twin Bakelite Block).....	3615-DG
⑬ Compensating Condenser (3rd I.F. Primary).....	Part of 31-6003
⑭ 3rd I.F. Transformer.....	32-1188
⑮ Compensating Condenser (3rd I.F. Secondary).....	Part of 31-6003
⑯ Condenser (.05 Mfd. Tubular).....	30-4123
⑰ Resistor (1000 ohms) (Brown-Black-Red).....	5837
⑱ Resistor (51000 ohms) (Green-Brown-Orange).....	33-1163
⑲ Condenser (.00011 Mfd. Twin Bakelite Block).....	8035-DG
㉑ Resistor (51000 ohms) (Green-Brown-Orange).....	33-1163
㉒ Condenser (.01 Mfd. Bakelite Block).....	3903-SU
㉓ Volume Control and On-Off Switch (See Note Below).....	33-5022
㉔ Condenser (.00005 Mfd. Mica).....	30-1029
㉕ Condenser (.05 Mfd. Tubular).....	30-4020
㉖ Resistor (60000 ohms) (Blue-Black-Orange).....	33-1181
㉗ Resistor (330000 ohms) (Orange-Orange-Yellow).....	33-1200
㉘ Condenser (.004 Mfd. Tubular).....	30-4185
㉙ Condenser (.004 Mfd. Tubular).....	30-4185
㉚ Condenser (.003 Mfd. Mica).....	30-1028
㉛ Condenser (.01 Mfd. Tubular).....	30-4169
㉜ Pilot Lamp (Shadow Tuning Meter).....	Part of ④
㉝ Tone Control Switch.....	42-1119
㉞ Resistor (2000 ohms) (Red-Black-Red).....	6984
㉟ Shadow Tuning Meter.....	45-2083
㊱ Resistor (1 Meg.) (Brown-Black-Green).....	33-1096
㊲ Resistor (500000 ohms) (Yellow-White-Yellow).....	6097
㊳ Condenser (.15 Mfd. Twin Bakelite Block).....	6287-DG
㊴ Condenser (Electrolytic—1 Mfd., 3 Mfd., 2 Mfd., 1 Mfd.).....	30-2121
㊵ Resistor (1 Meg.) (Brown-Black-Green).....	4409
㊶ Resistor (70000 ohms) (Violet-Black-Orange).....	5385
㊷ Condenser (.25 Mfd. Tubular).....	30-4134
㊸ Resistor (100000 ohms) (White-White-Yellow).....	4411
㊹ Condenser (.00011 Mfd. Mica).....	30-1031
㊺ Condenser (.05 Mfd. Bakelite Block).....	3615-SU
㊻ Resistor (160000 ohms) (Brown-Blue-Orange).....	33-1191
㊼ Resistor (100000 ohms) (White-White-Yellow).....	33-1166
㊽ Audio Transformer.....	32-7057
㊾ Output Transformer.....	32-7078
㊿ Cone and Voice Coil Assembly (H-13).....	02625
Field Coil & Pot Assembly (H-13).....	36-3104
B.C. Resistor (Wirewound) (20 ohms, 110 ohms, 130 ohms).....	33-3021
Resistor (Wirewound) (7750 ohms).....	33-3020
Resistor (30000 ohms) (Orange-Black-Orange).....	7836
Resistor (10000 ohms) (Brown-Black-Orange).....	3524
Resistor (13000 ohms) (Brown-Orange-Orange).....	6450
Filter Choke.....	32-7056
Condenser (.3 Mfd. Bakelite Block).....	**6287-DU
Condenser (Electrolytic, 8 Mfd.).....	1130-2025
Condenser (Electrolytic, 8 Mfd., 10 Mfd.).....	30-2045
115 V. 60 Cycles.....	32-7291
115 V. 25 Cycles.....	32-7292
230 V. 50 Cycles.....	32-7293
Condenser (.015 Mfd. Twin Bakelite Block).....	3793-DG
Resistor (10000 ohms) (Brown-Black-Orange).....	3524
Condenser (.002 Mfd. Mica).....	30-1042
Pilot Lamp (Dial).....	34-2039
Condenser (.006 Mfd. Tubular) (Not shown in Fig. 4).....	30-4125
Condenser (.006 Mfd. Tubular) (Not shown in Fig. 4).....	30-4125
Dial Scale.....	27-5107
Dial Mask and Hub Assembly.....	31-1575
Dial Hub.....	28-7129
Dial Spring Clamp.....	28-2837
Socket—4-Prong.....	27-6042
Socket—5-Prong.....	27-6035
Socket—6-Prong.....	27-6036
Speaker Plug Socket.....	27-6033
Knob (Volume, Tone Waveband).....	27-4208
Knob (Station Selector).....	27-4206
Knob (Slow Speed).....	27-4207
Tube Shield.....	28-2726
Tube Shield Base.....	28-2725
A.C. Cord & Plug.....	L-943A
Bezel.....	28-2936
Bezel Glass.....	27-7890
Chassis Mtg. Bolt.....	W-1496
Chassis Mtg. Washer (Rubber).....	27-4201
Chassis Mtg. Bumper (Rubber).....	27-4200

*Mounted on top of chassis.

†Mounted inside ④.

**In 25-cycle model, this is part No. 04357.

††In 25-cycle model, this is part No. 30-2026

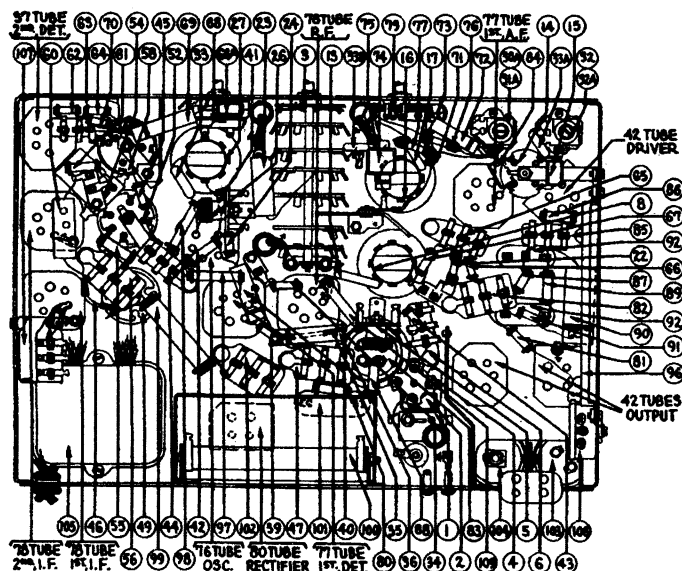
Note: Volume Control is 2 meg., tapped at 400,000 ohms

[illegible]

NUMBERS INDICATE RELATIVE POSITIONS OF SWITCH-
SECTIONS FROM FRONT OF CHASSIS

I.F.=460 KC.

ALL SWITCH-SECTIONS
SHOWN
IN POSITION No 5

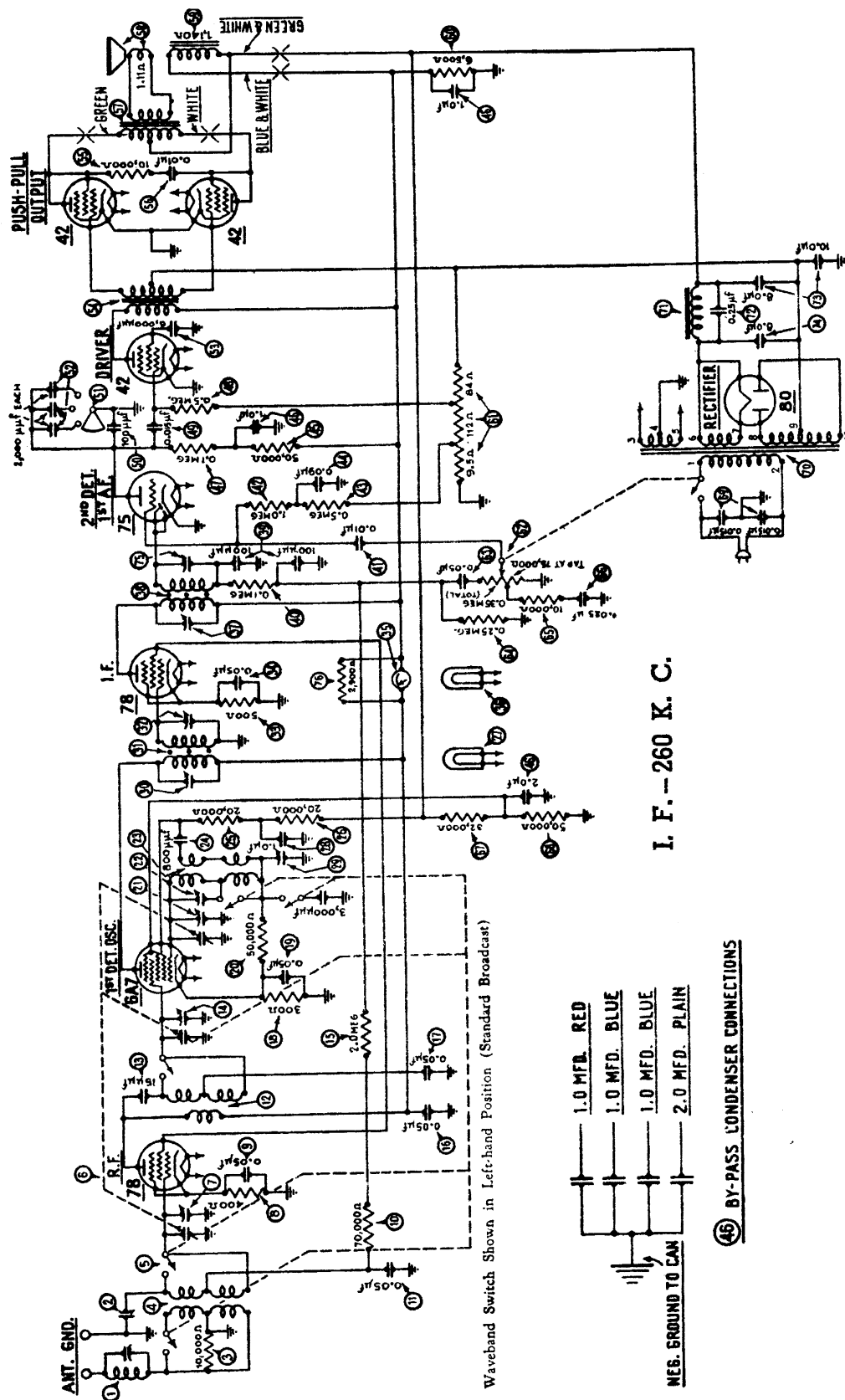


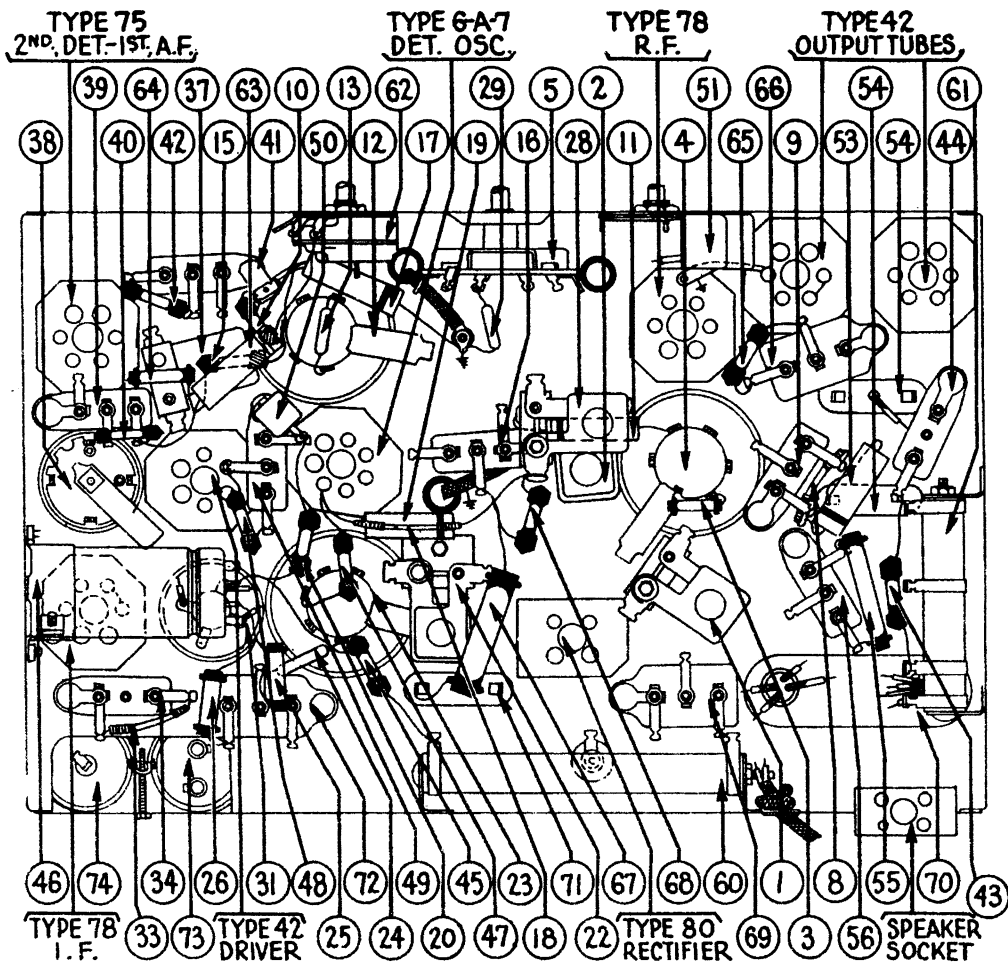
Replacement Parts Model 116 (122)

Note: All parts on schematic and base view numbered from (1) to (64) inclusive are the same as used on model 116B (121). Parts subsequent to 64 are listed herewith.

	Description	Part No.
(1)	Condenser (.05 Mfd. Bakelite Block)	3615-SU
(2)	Resistor (.5 Meg.) (Yellow-White-Yellow)	6097
(3)	Resistor (.5 Meg.) (Yellow-White-Yellow)	6097
(4)	Volume Control and On-Off Switch	33-5110
(5)	Condenser (.00005 Mfd. Mica)	30-1929
(6)	Condenser (.01 Mfd. Tubular)	30-4169
(7)	Resistor (330000 ohms) (Orange-Orange-Yellow)	33-1200
(8)	Resistor (51000 ohms) (Green-Brown-Orange)	6098
(9)	Condenser (.008 Mfd. Tubular)	30-4112
(10)	Condenser (.01 Mfd. Tubular)	30-4169
(11)	Condenser (.003 Mfd. Mica)	30-1028
(12)	Condenser (.01 Mfd. Tubular)	30-4169
(13)	Resistor (4 Meg.) (Yellow-Black-Green)	6010
(14)	Resistor (4 Meg.) (Yellow-Black-Green)	6010
(15)	Shadow Tuning Meter	45-2063
(16)	Pilot Lamp for Shadow Tuning Meter	Part of (15)
(17)	Tone Control Switch	42-1119
(18)	Resistor (2000 ohms) (Red-White-Red)	6094
(19)	Resistor (.5 Meg.) (Yellow-White-Yellow)	6097
(20)	Condenser (.15 Mfd. Twin Bakelite Block)	6287-DU
(21)	Condenser (Electrolytic) (1 Mfd., 3 Mfd., 2 Mfd., 1 Mfd.)	30-2121
(22)	Condenser (.00011 Mfd. Mica)	30-1031
(23)	Condenser (.05 Mfd. Bakelite Block)	3615-SU
(24)	Resistor (100000 ohms) (White-White-Yellow)	4411
(25)	Resistor (100000 ohms) (Brown-Blue-Yellow)	33-1191
(26)	Resistor (1 Meg.) (Brown-Black-Green)	4409
(27)	Resistor (70000 ohms) (Violet-Black-Orange)	5385
(28)	Condenser (.25 Mfd. Tubular)	30-4134
(29)	Resistor (100000 ohms) (White-White-Orange)	6095
(30)	Audio Transformer	32-7447
(31)	Output Transformer (On Speaker)	32-7446
(32)	Cone & Voice Coil Assembly (U-9)	36-3381
(33)	Field Coil & Pot Assembly (U-9)	36-3088
(34)	Resistor (Wirewound, Flat Type—17.6, 90.4, 267 ohms)	33-3212
(35)	Resistor (30000 ohms) (Orange-Black-Orange)	7836
(36)	Resistor (10000 ohms) (Brown-Black-Orange)	3524
(37)	Resistor (13000 ohms) (Brown-Orange-Orange)	6450
(38)	Resistor (7750 ohms, Wirewound Porcelain Tube)	33-3020
(39)	Filter Choke	32-7056
(40)	Condenser (.3 Mfd. Bakelite Block)	6287-DU
(41)	Condenser (Electrolytic) (8 Mfd., 10 Mfd.)	30-2123
(42)	Condenser (Electrolytic) (8 Mfd.)	30-2059
(43)	Power Transformer	32-7431
(44)	115 Volts, 60 Cycles	32-7432
(45)	115 Volts, 25 Cycles	32-7433
(46)	230 Volts, 50 Cycles	33-5111
(47)	Potentiometer	3703-DG
(48)	Condenser (.015 Mfd. Twin Bakelite Block)	34-2019
(49)	Pilot Lamp (Dial Scales)	27-6044
(50)	4-Prong Socket (6A3 Tubes)	

MODEL 118





Replacement Parts for Model 118

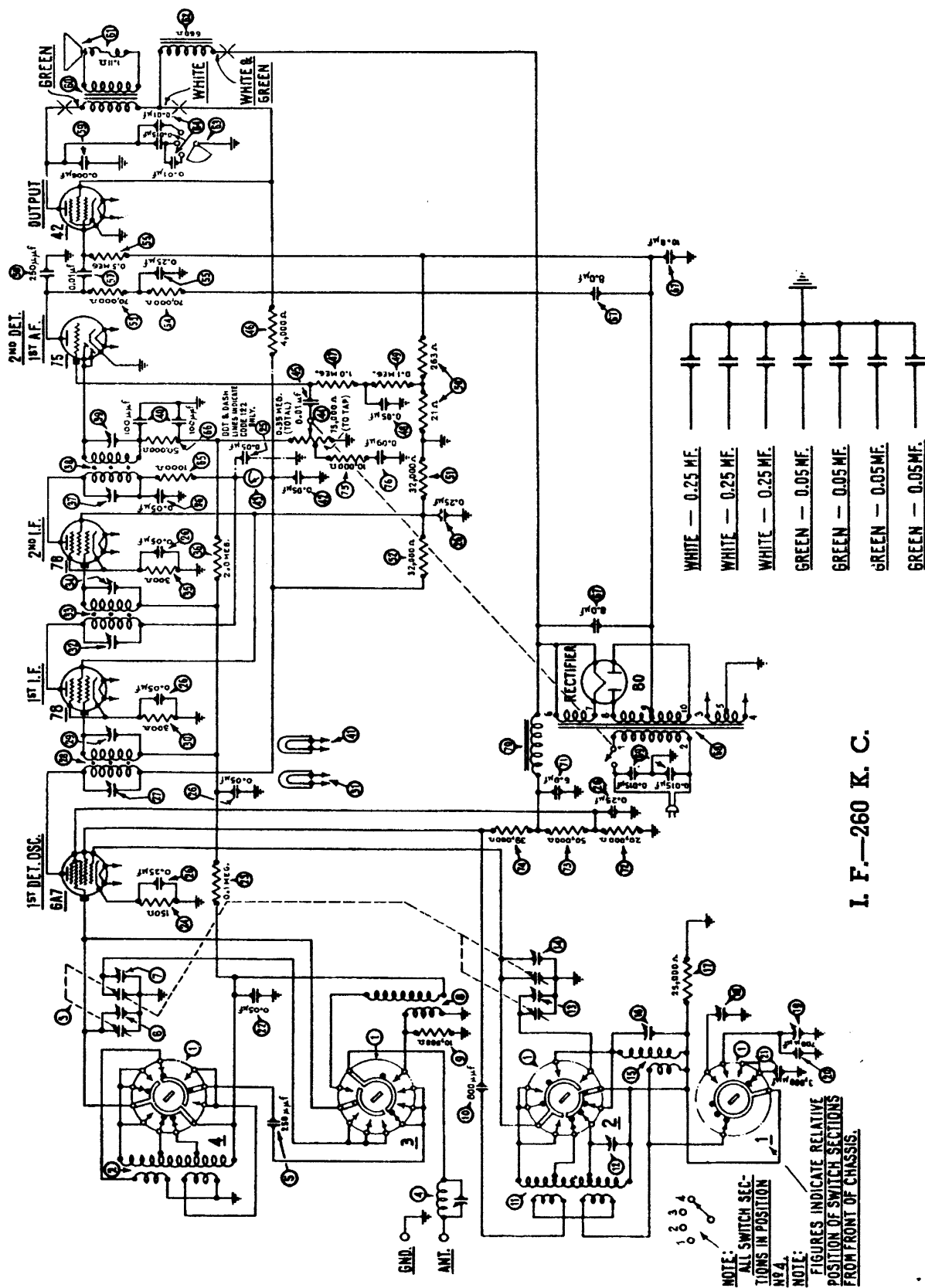
No. on Diagram	Description	Part No.
1	Wave Trap.....	38-5740
2	Compensating Condenser (Ant.-H. F.).....	04000D
3	Resistor (10,000 ohms) (Brown-Black-Orange).....	33-1000
4	Antenna Transformer.....	32-1378
5	Wave Band Switch.....	42-1046
6	Tuning Condenser Assembly.....	31-1173
7	Compensating Condenser (Ant.-Broadcast).....	Part of 6
8	Resistor (400 ohms Flexible Wire-Wound).....	33-3016
9	Condenser (.05 Mfd.) (Bakelite Block).....	3615BK
10	Resistor (70,000 ohms) (Violet-Black-Orange).....	5385
11	Condenser (.05 Mfd.) (Tubular).....	30-4020
12	Detector Transformer.....	32-1379
13	Condenser (.000015 Mfd.) (Mica).....	30-1030
14	Compensating Condenser (Det.).....	Part of 6
15	Resistor (2 Meg.) (Red-Black-Green).....	5872
16	Condenser (.05 Mfd.) (Bakelite Block).....	3615D
17	Condenser (.05 Mfd.) (Tubular).....	30-4020
18	Resistor (300 ohms Flexible Wire-Wound).....	33-3010
19	Condenser (.05 Mfd.) (Tubular).....	30-4020
20	Resistor (50,000 ohms) (Green-Brown-Orange).....	4518
21	Compensating Condenser (Osc. H. F. Bcast.).....	Part of 6
22	Compensating Condenser (Osc. H. F. Shortwave).....	31-6016
23	Oscillator Transformer.....	32-1380
24	Condenser (.0008 Mfd. Mica).....	5878
25	Resistor (20,000 ohms) (Red-Black-Orange).....	6650
26	Resistor (20,000 ohms) (Red-Black-Orange).....	6650
27	Pilot Lamp (Station Selector).....	6608
28	Compensating Condenser (Osc. L. F.).....	04000R
29	Condenser (.003 Mfd. Mica).....	7301
30	Compensating Condenser (1st I. F. Pri.).....	Part of 31
31	1st I. F. Transformer.....	32-1381
32	Compensating Condenser (1st I. F. Sec.).....	Part of 31
33	Resistor (500 ohms Flexible Wire-Wound).....	6977
34	Condenser (.05 Mfd.) (Bakelite Block).....	3615AU
35	Shadowmeter.....	6497
36	Shadowmeter Pilot Lamp.....	Part of 35
37	Compensating Condenser (2d I. F. Pri.).....	04000A
38	2d I. F. Transformer (Early Prod. 32-1258).....	32-1424
39	Condenser (.0001 Mfd. Twin) (Bakelite Block).....	8035-K
40	Resistor (.1 Meg.) (White-White-Orange).....	4411
41	Condenser (.01 Mfd. Bakelite Block).....	3903Z
42	Resistor (.1 Meg.) (Brown-Black-Green).....	4409
43	Resistor (.5 Meg.) (Yellow-White-Yellow).....	4517
44	Condenser (.09 Mfd. Bakelite Block).....	4989D

No. on Diagram	Description	Part No.
45	Resistor (50,000 ohms) (Green-Brown-Orange).....	4518
46	Condenser (Electrolytic 1, 1, 1, and 2 Mfd.).....	30-2078
47	Resistor (.1 Meg.) (White-White-Orange).....	4411
48	Resistor (.5 Meg.) (Yellow-White-Yellow).....	4517
49	Condenser (.015 Mfd. Bakelite Block).....	3793F
50	Condenser (.0001 Mfd. Mica).....	4519
51	Tone Control.....	30-4186
52	Condensers (In Tone Control).....	Part of 51
53	Condenser (.006 Mfd. Tubular).....	30-4024
54	Input Transformer.....	32-7114
55	Resistor (10,000 ohms) (Brown-Black-Orange).....	3524
56	Condenser (.01 Mfd. Bakelite Block).....	3903P
57	Output Transformer.....	32-7078
58	Voice Coil and Cone Assembly.....	H-13-02625
		K-17-36-3020
59	Field Coil and Pot Assembly.....	36-3104
60	Resistor (Wire-Wound) (6500 ohms).....	33-3033
61	Resistor (Wire-Wound) (9.5, 112, 84 ohms).....	33-3034
62	Volume Control and On-Off Switch.....	33-5024
63	Condenser (.05 Mfd. Tubular).....	30-4020
64	Resistor (240,000 ohms) (Red-Yellow-Yellow).....	4410
65	Resistor (10,000 ohms) (Brown-Black-Orange).....	4412
66	Condenser (.025 Mfd. Bakelite Block).....	7653D
67	Resistor (32,000 ohms) (Orange-Red-Orange).....	33-1026
68	Resistor (50,000 ohms) (Green-Brown-Orange).....	4518
69	Condenser (.015 Mfd. Twin) (Bakelite Block).....	3793R
70	Power Transformer.....	32-7111
71	Filter Choke.....	32-7115
72	Condenser (.25 Mfd.).....	6287-R
73	Condenser (Elec. 8 Mfd. 10 Mfd.).....	30-2045
74	Condenser (Elec. 8 Mfd.).....	30-2025
75	Compensating Condenser (2d I. F. Secondary).....	Part of 76
76	Resistor (2900 ohms) (Red-White-Red).....	5309
	Chassis Mtg. Screw.....	W-1345A
	Chassis Mtg. Washer.....	29-2069
	Chassis Mtg. Foot (Rubber).....	27-4116
	Chassis Mtg. Foot Plate.....	27-7497
	Knob Assembly (Large).....	27-4061
	Knob Assembly (Small).....	27-4062
	Dial Assembly.....	31-1205
	Dial Scale.....	27-5046
	Tube Shield.....	28-1107
	4 Prong Socket.....	7544
	6 Prong Socket.....	7547
	7 Prong Socket.....	27-8005
	Speaker Socket.....	4957
	A. C. Cord and Plug.....	L-943A

See Note below Fig. 4

When this part is incorporated as part of (58), not visible from below

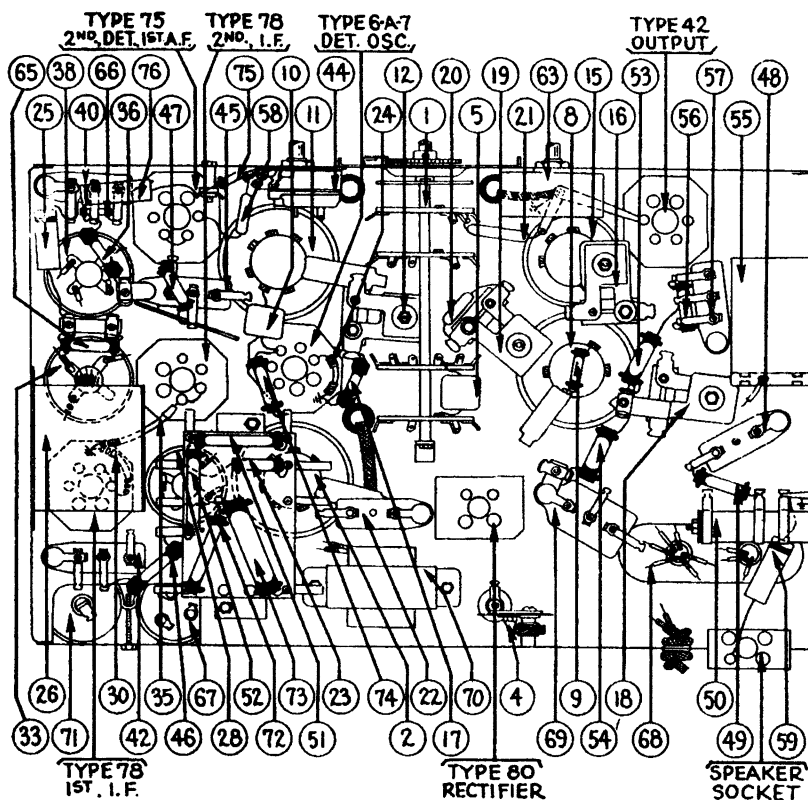
MODEL 144



L. F.—260 K. C.

26 BY-PASS CONDENSER BLOCK CONNECTIONS.

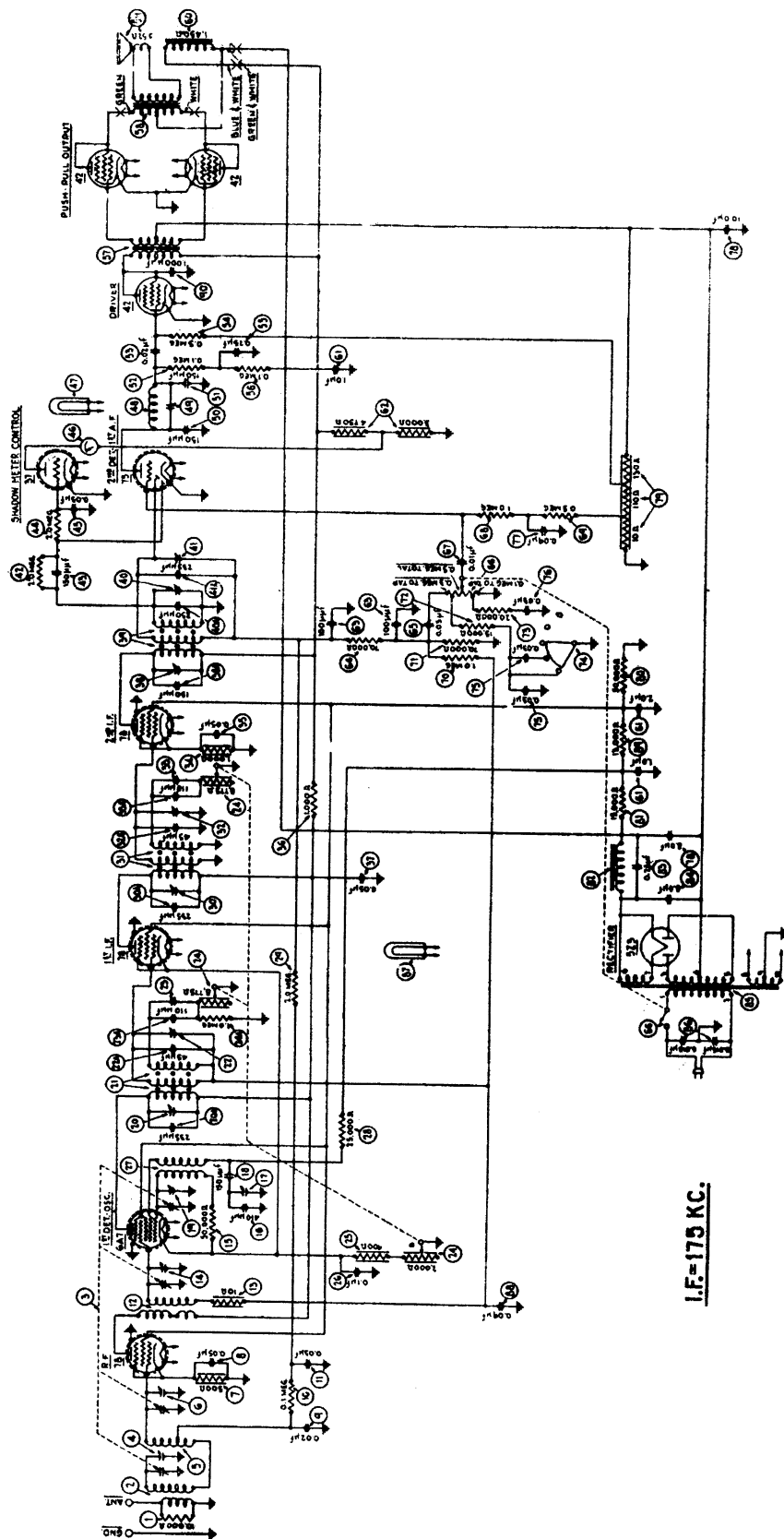
MODEL 144



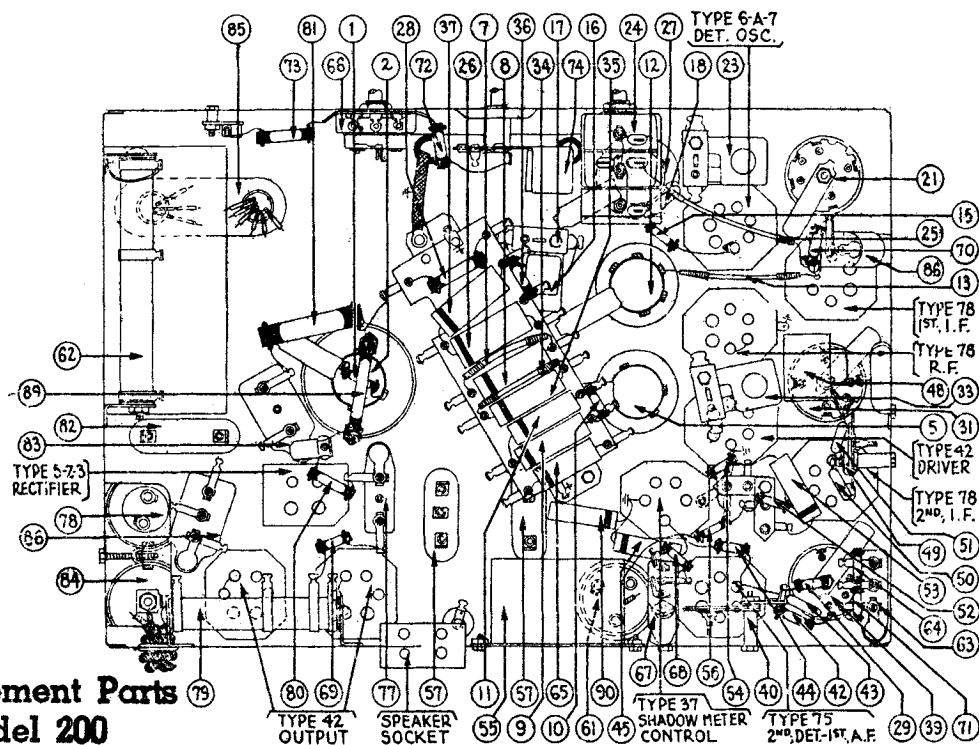
REPLACEMENT PARTS — MODEL 144

No. on Diagram	Description	Part No.	No. on Diagram	Description	Part No.
①	Wave-Band Switch.....	42-1045	④⑥	Resistor (4,000 ohms) (Yellow-Black-Red).....	7832
②	Antenna Transformer (H. F. Bands).....	32-1271	④⑦	Resistor (1 Meg.) (Brown-Black-Green).....	4409
③	Tuning Condenser Assembly.....	31-1175	④⑧	Condenser (.05 Mfd. Bakelite Block).....	3615-L
④	Wave Trap.....	38-5487	④⑨	Resistor (100,000 ohms) (White-White-Orange).....	4411
⑤	Condenser (.00025 Mica).....	3082	④⑩	Resistor BC (265 ohms, 21 ohms, Wire-Wound).....	33-3069
⑥	Compensating Condenser (Ant. H. F.).....	Part of ③	⑤①	Resistor (32,000 ohms) (Orange-Red-Orange).....	3525
⑦	Compensating Condenser (Ant. Broadcast).....	Part of ③	⑤②	Resistor (32,000 ohms) (Orange-Red-Orange).....	3525
⑧	Antenna Transformer (Broadcast Band).....	32-1270	⑤③	Resistor (70,000 ohms) (Violet-Black-Orange).....	5385
⑨	Resistor (10,000 ohms) (Brown-Black-Orange).....	33-1000	⑤④	Resistor (70,000 ohms) (Violet-Black-Orange).....	5385
⑩	Condenser (.0008 Mfd. Mica).....	6021	⑤⑤	Condenser (25 Mfd.) (Metal Case).....	4264
⑪	Oscillator Transformer (H. F. Bands).....	32-1273	⑤⑥	Resistor (500,000 ohms) (Yellow-White-Yellow).....	4517
⑫	Compensating Condenser (Range 2).....	04000C	⑤⑦	Condenser (.01 Mfd. Bakelite Block).....	3903AN
⑬	Compensating Condenser (Osc. Range 4).....	Part of ③	⑤⑧	Condenser (.00025 Mfd. Mica).....	30-1032
⑭	Compensating Condenser (Osc. Range 3).....	Part of ③	⑤⑨	Condenser (.005 Mfd. Tubular).....	30-4024
⑮	Oscillator Transformer (Broadcast).....	32-1272	⑥①	Output Transformer.....	32-7178
⑯	Compensating Condenser (Osc. Broadcast).....	04000A	⑥②	Voice Coil & Cone Assembly.....	(H-16) 02625 (K-23) 36-3174 H-16 (36-3218) K-23 (36-3239)
⑰	Resistor (25,000 ohms) (Red-Green-Orange).....	33-1013	⑥③	Field Coil & Pot Assembly.....	30-4168
⑱	Compensating Condenser (Broadcast Series).....	04000S	⑥④	Tone Control.....	30-4168
⑲	Compensating Condenser (Range 2; Series).....	04000R	⑥⑤	Condensers (Inside 63).....	Part of ④③
⑳	Condenser (.0007 Mfd. Mica).....	4520	⑥⑥	Resistor (1,000 ohms) (Brown-Black-Red).....	5837
㉑	Condenser (.003 Mfd. Mica).....	7301	⑥⑦	Resistor (50,000 ohms) (Green-Brown-Orange).....	6098
㉒	Condenser (.05 Mfd. Bakelite Block).....	3615-L	⑥⑧	Condenser—Electrolytic (8-8-10 Mfd.).....	30-2073
㉓	Resistor (100,000 ohms) (White-White-Orange).....	4411	⑥⑨	Power Transformer.....	32-7234
㉔	Resistor (150 ohms Flexible Wire-Wound).....	33-3140	⑥⑩	Condenser (.015 Mfd. Twin).....	3793-H
㉕	Condenser (.05 mfd. tubular) (Used in Code 122 only).....	30-4123	⑦①	Filter Choke.....	5930
㉖	Condenser Block (.25, .25, .25, .05, .05, .05).....	30-4167	⑦②	Condenser (6 Mfd. Electrolytic).....	30-2020
㉗	Compensating Condenser (1st I. F. Pri.).....	Part of ②⑨	⑦③	Resistor (20,000 ohms) (Red-Black-Orange).....	6649
㉘	1st I. F. Transformer.....	32-1369	⑦④	Resistor (50,000 ohms) (Green-Brown-Orange).....	5868
㉙	Compensating Condenser (1st I. F. Sec.).....	Part of ②⑨	⑦⑤	Resistor (39,000 ohms) (Orange-White-Orange).....	33-1027
㉚	Resistor (300 ohms Flexible Wire-Wound).....	33-3010	⑦⑥	Resistor (10,000 ohms) (Brown-Black-Orange).....	33-1000
㉛	Pilot Lamp.....	6608	⑦⑦	Condenser (.02 Mfd. Tubular).....	30-4113
㉜	Compensating Condenser (2d I. F. Pri.).....	Part of ③③	⑦⑧	A. C. Cord and Plug Assembly.....	L-943A
㉝	2d I. F. Transformer.....	32-1306	⑦⑨	Dial Assembly.....	31-1206
㉞	Compensating Condenser (2d I. F. Sec.).....	Part of ③③	⑦⑩	Dial Scale.....	27-5044
㉟	Resistor (300 ohms Flexible Wire-Wound).....	33-3010	⑦⑪	Chassis Mounting Screw.....	W-1358A
㊱	Resistor (2 Megs.) (Red-Black-Green).....	33-1025	⑦⑫	Chassis Mounting Foot (Rubber).....	27-4116
㊲	Compensating Condenser (3d I. F. Pri.).....	Part of ③③	⑦⑬	Chassis Mounting Foot (Plate).....	27-7497
㊳	3d I. F. Transformer.....	32-1307	⑦⑭	Tube Shield.....	28-1107
㊴	Compensating Condenser (3d I. F. Sec.).....	Part of ③③	⑦⑮	4 Prong Tube Socket.....	7544
㊵	Condenser (.0001 Mfd. Twin—Bakelite Block).....	8035-L	⑦⑯	6 Prong Tube Socket.....	7547
㊶	Pilot Lamp for Shadowmeter.....	Part of ④③	⑦⑰	7 Prong Tube Socket.....	27-6005
㊷	Condenser (.05 Mfd. Bakelite Block).....	3615AB	⑦⑱	Speaker Socket.....	4957
㊸	Shadowmeter.....	6497	⑦⑲	Knob (Large).....	27-4051
㊹	Volume Control & On-Off Switch.....	33-5068	⑦⑳	Knob (Small).....	27-4052
㊺	Condenser (.01 Mfd. Bakelite Block).....	3903J	⑦㉑	Knob (Station Selector).....	27-4127

MODEL 200



NOTE: An 8000 ohm resistor, 22-3016 (Gray-Black-Red) is added across the 2000 ohm section of 2A.

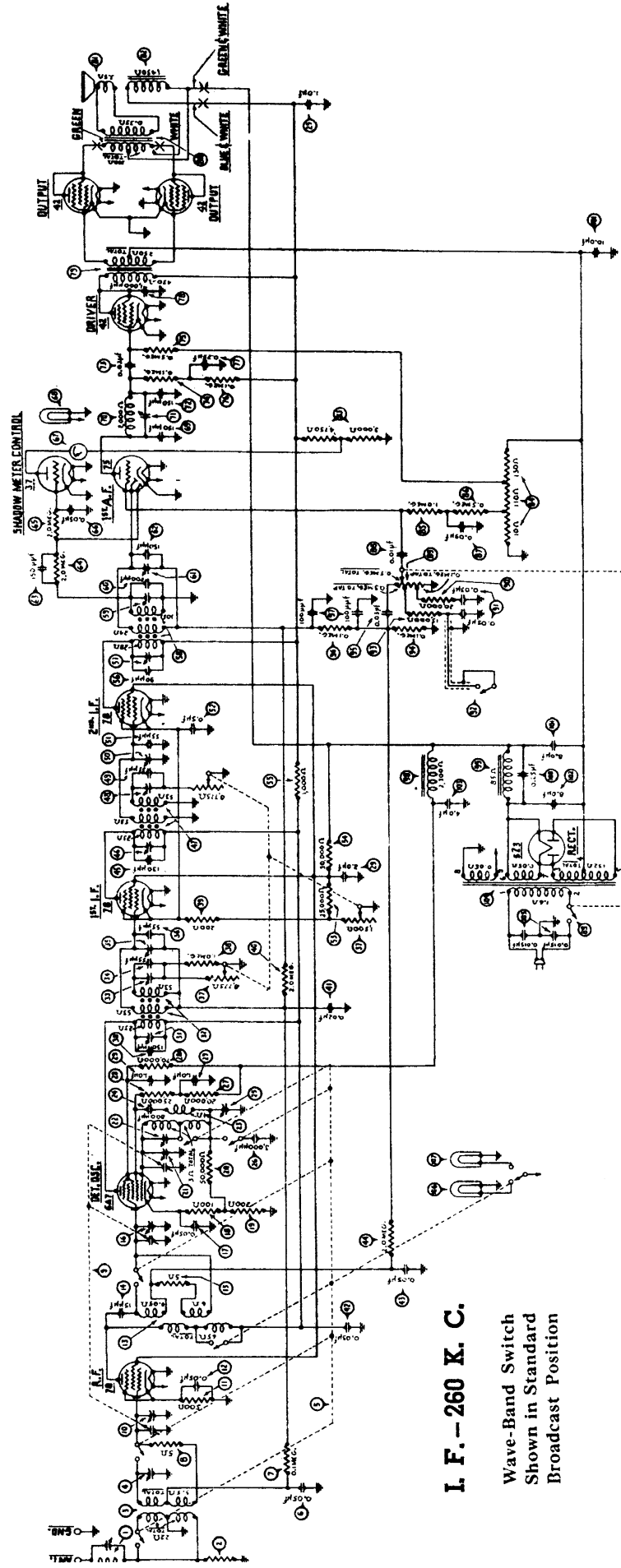


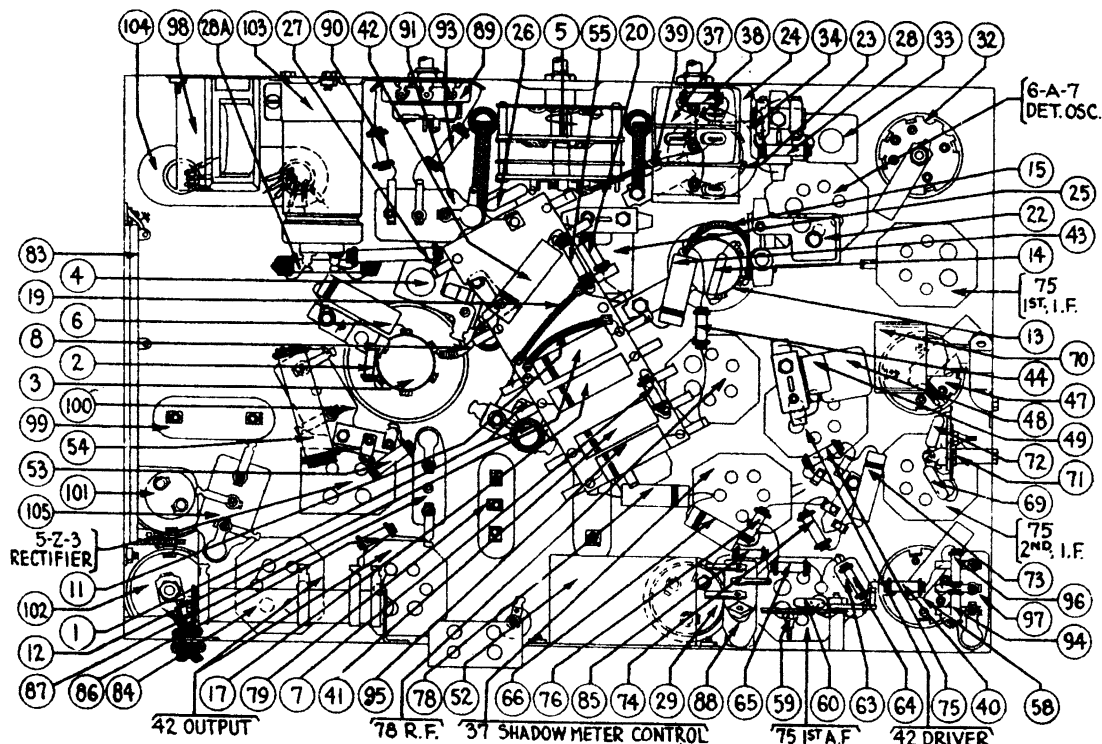
Replacement Parts Model 200

No. on Diagram	Description	Part No.
1	Resistor (10,000 ohms) (Brown-Black-Orange).....	33-1000
2	Antenna Transformer.....	32-1420
3	Tuning Condenser Assembly.....	31-1217
4	Compensating Condenser (Ant.).....	Part of 3
5	R. F. Transformer.....	32-1421
6	Compensating Condenser (R. F.).....	Part of 3
7	Resistor (500 ohms) (Flexible; Green-Black-Brown).....	6977
8	Condenser (.05 Mfd. Tubular).....	30-4020
9	Condenser (.02 Mfd. Tubular).....	30-4113
10	Resistor (100,000 ohms) (White-White-Orange).....	6099
11	Condenser (.03 Mfd. Tubular).....	30-4025
12	Detector Transformer.....	32-1422
13	Resistor (10 ohms Flexible Wire-Wound).....	33-3139
14	Compensating Condenser (Det.).....	Part of 3
15	Resistor (50,000 ohms) (Green-Brown-Orange).....	5808
16	Condenser (.00041 Mfd. Mica).....	30-1000
17	Compensating Condenser (Osc. L. F.).....	04000R
18	Condenser (.00015 Mfd. Mica).....	30-1033
19	Compensating Condenser (Osc. H. F.).....	Part of 3
20	Compensating Condenser (1st I. F. Pri.).....	Part of 21
21A	Condenser (.000235 Mfd. Mica).....	30-1037
22	First I. F. transformer.....	32-1403
23	Compensating Condenser (1st I. F. Sec.).....	Part of 21
24A	Condenser (.000045 Mfd. Mica).....	30-1034
25	Compensating Condenser (1st I. F. Tertiary).....	04000A
26A	Condenser (.00011 Mfd. Mica).....	30-1035
27	Fidelity-Selectivity Control (Wire-Wound Resistors) (2000, 8775, 8775 ohm).....	33-5070
28A	Resistor (1 Meg.) (Brown-Black-Green).....	33-1096
29	Resistor (400 ohms Flexible Wire-Wound).....	33-3018
30	Condenser (.1 Mfd. Tubular).....	30-4122
31	Oscillator Transformer.....	32-1423
32	Resistor (25,000 ohms) (Red-Green-Orange).....	4518
33	Resistor (2 Megs.) (Red-Black-Green).....	33-1025
34	Compensating Condenser (2d I. F. Primary).....	Part of 31
35A	Condenser (.000235 Mfd. Mica).....	30-1037
36	2d I. F. Transformer.....	32-1403
37	Compensating Condenser (2d I. F. Sec.).....	Part of 31
38A	Condenser (.000045 Mfd. Mica).....	30-1034
39	Compensating Condenser (2d I. F. Tertiary).....	04000A
40A	Condenser (.00011 Mfd. Mica).....	30-1035
41	Resistor (1,000 ohms) (Flexible Wire-Wound).....	33-3017
42	Condenser (.05 Mfd. Tubular).....	30-4020
43	Resistor (1,000 ohms) (Brown-Black-Red).....	5837
44	Condenser (.05 Mfd. Tubular).....	30-4123
45	Compensating Condenser (3d I. F. Primary).....	Part of 39
46A	Condenser (.00015 Mfd. Mica).....	30-1041
47	Third I. F. Transformer.....	32-1404
48	Compensating Condenser (3d I. F. Tertiary).....	04000X
49A	Condenser (.00025 Mfd. Mica).....	30-1038
50	Compensating Condenser (3d I. F. Secondary).....	Part of 39
51A	Condenser (.000235 Mfd. Mica).....	30-1037
52	Resistor (2 Megs.) (Red-Black-Green).....	33-1025
53	Condenser (.00015 Mfd. Mica).....	30-1033
54	Resistor (2 Megs.) (Red-Black-Green).....	33-1025
55	Condenser (.05 Mfd. Tubular).....	30-4020
56	Shadowmeter.....	45-2028
57	Pilot Lamp (Shadowmeter).....	Part of 56

No. on Diagram	Description	Part No.
58	Filter Coil (10 K. C.).....	32-7261
59	Compensating Condenser (10 K.C. Audio Filter Trap Circuit).....	04000B
60	Condenser (.00015 Mfd. Mica).....	30-1033
61	Condenser (.00015 Mfd. Mica).....	30-1033
62	Resistor (100,000 ohms) (White-White-Orange).....	6099
63	Condenser (.02 Mfd. Tubular).....	30-4113
64	Resistor (.5 Meg.) (Yellow-White-Yellow).....	6097
65	Condenser (.25 Mfd. Metal Case).....	4264
66	Resistor (100,000 ohms) (White-White-Orange).....	6099
67	Audio Transformer.....	32-7057
68	Output Transformer (On Speaker).....	32-7247
69	Voice Coil and Cone Assembly (U-7 Speaker).....	36-3321
70	Field Coil and Pot Assembly (U-7 Speaker).....	36-3098
71	Condenser (Electrolytic—1, 1, 2 Mfd.).....	30-2080
72	B. C. Resistor (Wire-Wound—4750 ohms, 3000 ohms).....	33-3138
73	Condenser (.0001 Mfd. Twin—Bakelite Block).....	8035-P
74	Resistor (70,000 ohms) (Violet-Black-Orange).....	33-1115
75	Condenser (.03 Mfd. Tubular).....	30-4025
76	Volume Control (500,000 ohms Tapped at 100,000) and On-Off Switch.....	33-5071
77	Condenser (.01 Mfd. Bakelite Block).....	3903-G
78	Resistor (1 Meg.) (Brown-Black-Green).....	33-1096
79	Resistor (500,000 ohms) (Yellow-White-Yellow).....	6097
80	Resistor (1 Meg.) (Brown-Black-Green).....	33-1096
81	Resistor (70,000 ohms) (Violet-Black-Orange).....	33-1115
82	Resistor (15,000 ohms) (Brown-Green-Orange).....	6208
83	Resistor (20,000 ohms) (Red-Black-Orange).....	6650
84	Bass Compensator.....	30-4196
85	Condensers (In Bass Compensator).....	Part of 84
86	Condenser (.03 Mfd. Tubular).....	30-4025
87	Condenser (.09 Mfd. Bakelite Block).....	4989AR
88	Condenser (Electrolytic—8 10 Mfd.).....	30-2046
89	B. C. Resistor (10 110, 130 ohms).....	33-3137
90	Resistor (51,000 ohms) (Green-Brown-Orange).....	4518
91	Resistor (15,000 ohms) (Brown-Green-Orange).....	5718
92	Filter Choke.....	32-7056
93	Condenser (.25 Mfd. Bakelite Block).....	6287-S
94	Condenser (Electrolytic—8 Mfd.).....	30-2011
95	Power Transformer, 115 volts 60 cycles.....	32-7258
	" " 115 volts 25 cycles.....	32-7259
96	Condenser (.015 Mfd. Twin Bakelite Block).....	3793-K
97	Pilot Lamp (Station Selector).....	6608
98	Condenser (.09 Mfd. Bakelite Block).....	4989N
99	Resistor (13,000 ohms) (Brown-Orange-Orange).....	3766
100	Condenser (.001 Mfd. Tubular).....	30-4201
	Four Prong Socket.....	7544
	Five Prong Socket.....	7546C
	Six Prong Socket.....	6417C
	Seven Prong Socket.....	27-6005
	Speaker Socket.....	4957
	Dial Assembly.....	31-1255
	Dial Scale.....	27-5049
	Knob (Large).....	27-4051
	Knob (Small).....	27-4052
	Chassis Mtg. Screw.....	W1388A
	Chassis Mtg. Foot (Rubber).....	27-4116
	Chassis Mtg. Foot (Steel).....	29-1983
	Chassis Mtg. Foot Plate.....	27-7497
	Tube Shield.....	28-1107
	A. C. Cord and Plug Assembly.....	L-943A

MODEL 201



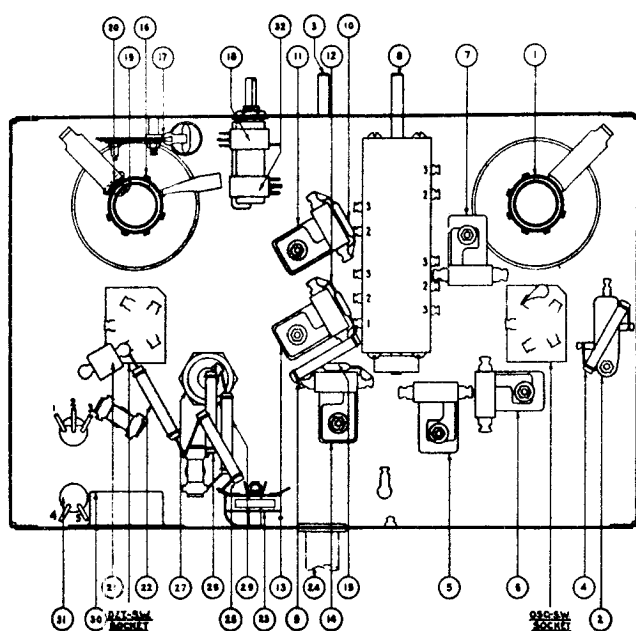


Replacement Parts—Model 201

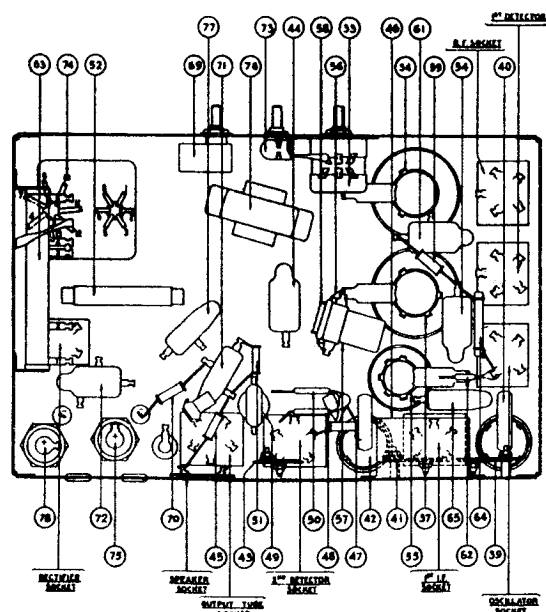
Nos. on Diagram	Description	Part No.	Nos. on Diagram	Description	Part No.
1	Wave Trap	38-6248	60	Compensating Condenser (3rd I. F. Sec.)	Part of 59
2	Resistor (10000 ohms) (Brown-Black-Orange)	33-1000	61	Condenser (.00015 Mfd. Mica)	30-1041
3	Antenna Transformer	32-1481	62	Condenser (.00015 Mfd. Mica)	30-1033
4	Compensating Condenser (ANT. S. W.)	04000D	63	Resistor (2 Meg.) (Red-Black-Green)	33-1025
5	Waveband Switch	42-1093	64	Resistor (2 Meg.) (Red-Black-Green)	33-1025
6	Condenser (.05 Mfd. Tubular)	30-4020	65	Condenser (.03 Mfd. Tubular)	30-4025
7	Resistor (1 Meg.) (White-White-Yellow)	6099	66	Shadowmeter	45-2028
8	Resistor (5 ohms Flexible Wire-wound)	33-3186	67	Pilot Lamp (Shadowmeter)	Part of 65
9	Tuning Condenser Assembly	31-1379	68	Condenser (.00015 Mfd. Mica)	30-1046
10	Compensating Condenser (ANT.)	Part of 9	69	Filter Trap Coil (10 K.C. Trap)	32-7261
11	Resistor (500 ohms Flexible Wire-wound)	6977	70	Compensating Condenser (10 K.C. Trap)	01000B
12	Condenser (.05 Mfd. Tubular)	30-4020	71	Condenser (.03015 Mfd. Mica)	30-1041
13	Detector Transformer	32-1482	72	Condenser (.02 Mfd. Tubular)	30-4113
14	Condenser (.00015 Mica)	30-1030	73	Resistor (.1 Meg.) (White-White-Yellow)	6099
15	Resistor (5 Ohms Flexible Wire-wound)	33-3186	74	Resistor (.5 Meg.) (Yellow-White-Yellow)	6097
16	Compensating Condenser (DET.)	Part of 15	75	Resistor (.1 Meg.) (White-White-Yellow)	6099
17	Condenser (.05 Mfd. Tubular)	30-4020	76	Condenser (.25 Mfd. Metal Case)	Part of 52
18	Resistor (100 ohms Flexible Wire-wound)	33-3187	77	Condenser (.001 Mfd. Tubular)	30-4201
19	Resistor (200 ohms Flexible Wire-wound)	7217	78	Audio Transformer	32-7057
20	Resistor (30000 ohms) (Green-Black-Orange)	6098	79	Output Transformer (On Speaker)	32-7247
21	Compensating Condenser (OSC. H. F. Bdest.)	Part of 20	80	Voice Coil & Cone Assembly (U-7)	36-3381
22	Compensating Condenser (OSC. S. W.)	31-6016	81	Field Coil & Pot Assembly (U-7)	36-3088
23	Oscillator Transformer	32-1504	82	B. C. Wire-wound Resistor (3000, 4750 ohms)	33-3182
24	Condenser (.0008 Mfd. Mica)	5878	83	Resistor (Wire-wound) (10, 110, 130 ohms)	33-3137
25	Compensating Condenser (OSC. L. F.)	04000R	84	Resistor (1 Meg.) (Brown-Black-Green)	33-1096
26	Condenser (.003 Mfd. Mica)	30-1028	85	Resistor (.5 Meg.) (Yellow-White-Yellow)	6097
27	Resistor (20000 ohms) (Red-Black-Orange)	6649	86	Condenser (.09 Mfd. Bakelite Block)	4981D
28	Resistor (25000 ohms) (Red-Green-Orange)	4516	87	Condenser (.01 Mfd. Bakelite Block)	3003G
29	Resistor (70000 ohms) (Violet-Black-Orange)	3542	88	Volume Control & On-Off Switch	33-5071
30	Condenser (Electrolytic—1, 1, 1 and 2 Mfd.)	30-2080	89	Resistor (20000 ohms) (Red-Black-Orange)	33-1130
31	Condenser (.02013 Mfd. Mica)	30-1033	90	Condenser (Bass Compensator)	323B
32	Compensating Condenser (1st I. F. Pri.)	Part of 31	91	Bass Compensation Switch	3253
33	1st I. F. Transformer	32-1483	92	Resistor (15000 ohms) (Brown-Green-Orange)	6208
34	Compensating Condenser (1st I. F. Tertiary)	04000A	93	Resistor (.1 Meg.) (White-White-Orange)	6099
35	Condenser (.003055 Mfd. Mica)	30-1045	94	Condenser (.03 Mfd. Tubular)	30-4025
36	Compensating Condenser (1st I. F. Sec.)	Part of 35	95	Resistor (.1 Meg.) (White-White-Orange)	6099
37	Condenser (.000055 Mfd. Mica)	30-1045	96	Condenser (.0001 Mfd. Twin Bakelite Block)	8035P
38	Fidelity-Selectivity Control (Wire-wound—8775, 8775 1500 ohms)	33-5083	97	Filter Choke	32-7018
39	Resistor (1 Meg.) (Brown-Black-Green)	33-1096	98	Filter Choke	32-7056
40	Resistor (200 ohms Flexible Wire-wound)	7217	99	Condenser (.25 Mfd. Bakelite Block)	6287S
41	Resistor (2 Megs.) (Red-Black-Green)	33-1025	100	Condenser (Electrolytic 8 & 10 Mfd.)	30-2046
42	Condenser (.02 Mfd. Tubular)	30-4113	101	Condenser (Electrolytic 8 Mfd.)	30-2011
43	Condenser (.05 Mfd. Tubular)	30-4020	102	Condenser (Electrolytic 4 Mfd.)	30-2104
44	Condenser (.05 Mfd. Tubular)	30-4020	103	Power Transformer (60 Cycle 115 Volts)	32-7258
45	Resistor (2 Megs.) (Red-Black-Green)	33-1025	104	Power Transformer (25 Cycle 115 Volts)	32-7259
46	Condenser (.00913 Mfd. Mica)	30-1096	105	Condenser (.015 Mfd. Twin Bakelite Block)	3793K
47	Compensating Condenser (2nd I. F. Pri.)	Part of 46	106	Dial Lamp (Standard Band)	34-2040
48	2nd I. F. Transformer	32-1483	107	Dial Lamp (Short-wave Band)	34-2040
49	Compensating Condenser (2nd I. F. Tertiary)	04000A	108	Dial Assembly	31-1205
50	Condenser (.000055 Mfd. Mica)	30-1045	109	Dial Scale	27-5046
51	Compensating Condenser (2nd I. F. Sec.)	Part of 50	110	Knob (Large)	27-4051
52	Condenser (.000055 Mfd. Mica)	30-1045	111	Knob (Small)	27-1052
53	Condenser (.5 & .25 Mfd. Metal Case) (Includes 53)	30-4229	112	Tube Shield	28-1107
54	Resistor (25000 ohms) (Red-Black-Orange)	4516	113	Tube Socket (4 Prong)	7544
55	Resistor (30000 ohms) (3 watt) (Orange-Black-Orange)	33-1018	114	Tube Socket (5 Prong)	27-6012
56	Resistor (1000 ohms) (Brown-Black-Red)	5837	115	Tube Socket (6 Prong)	6117
57	Condenser (.00009 Mfd. Mica)	30-1046	116	Tube Socket (7 Prong)	27-6005
58	Compensating Condenser (3rd I. F. pri.)	Part of 57	117	Speaker Socket	7528
59	3rd I. F. Transformer	32-1494	118	Chassis Mtg. Screw	W1386A
60	Compensating Condenser (3rd I. F. Tertiary)	01000X	119	Chassis Mtg. Foot	27-4116
61	Condenser (.0002 Mfd. Mica)	30-1047	120	Chassis Mtg. Foot Plate	27-7497
			121	AC Cord & Plug Assembly	L943A
			122	Bass Compensation Switch Plate	28-2415

<u>SWITCH</u> <u>POSITION</u>	<u>FREQUENCY</u> <u>(MEGACYCLES)</u>
1	1.5 TO 3.6
2	3.6 TO 8.5
3	8.5 TO 190

MODELS 470 AND 470-A



Short Wave Chassis.



Broadcast Chassis.

REPLACEMENT PARTS MODEL 470 AND 470-A

No. on Figs. 1 and 2	Description	Part No.
(1)	Oscillator Coil*	03734
(2)	By-pass Condenser (.05 mfd.)	3615-M
(3)	Gang Condenser Assembly	03692
(4)	Resistor (13,000 ohms)	3766
(5)	Compensating Condenser (19 MC End of Top Scale)	04000-E
(6)	Compensating Condenser (8.5 MC End of Center Scale)	04000-E
(7)	Compensating Condenser (3.6 MC End of Bottom Scale)	04000-E
(8)	Frequency Control Switch	03751
(9)	Resistor (240,000 ohms)	3768
(10)	Condenser (.1250 mmf.)**	5886
(11)	Compensating Condenser (8.5 MC End of Top Scale**)	04000-F
(12)	Condenser (800 mmf.)	5878
(13)	Compensating Condenser (3.6 MC End of Center Scale)	04000-F
(14)	Condenser (250 mmf.)	3082
(15)	Compensating Condenser (1.5 MC End of Bottom Scale)	04000-F
(16)	Detector Transformer*	03734
(17)	Frequency Filter	03662
(18)	Antenna Switch Assembled with (21)	5796
(19)	Resistor (2 megohms) Assembled with (20)	03879
(20)	Condenser (110 mmf.) Assembled with (19)	03879
(21)	Condenser (250 mmf.)	3082
(22)	Resistor (99,000 ohms)	3767
(23)	R. F. Choke	03893
(24)	Shielded Cable	L-1278
(25)	Resistor (32,000 ohms)	3525
(26)	Resistor (32,000 ohms)	3525
(27)	Electrolytic Condenser (6 mfd.)	4916
(28)	Pilot Light (Short Wave Unit)	3463
(29)	Resistor (5,000 ohms)	3526
(30)	Plug	03913
(31)	Filament Transformer	(50-60 cycles) 5906 (25-40 cycles) 5923 (50-60 cycles, 230 volts) 5924
(32)	On-off Switch (Assembled with (33))	5796
(33)	Volume Control	5039
(34)	First R. F. Transformer	03082
(35)	Tuning Condenser (50-60 cycles)	03076
(36)	Tuning Condenser (25-40 cycles)	03077
(37)	Compensating Condenser — Antenna — Part of Gang Condenser Assembly	03083
(38)	First Detector Transformer	03083
(39)	Compensating Condenser — Detector — Part of Gang Condenser Assembly	03083
(40)	Compensating Condenser — First I. F. Primary	04000-J
(41)	First I. F. Transformer	03091
(42)	Compensating Condenser — First I. F. Secondary	04000-H
(43)	Second I. F. Transformer	03092
(44)	Compensating Condenser—Second I. F. Resistor (250 ohms Combined with .09 mfd. Condenser)	04000-K 4989-E

*Includes matched oscillator coil and detector transformer.

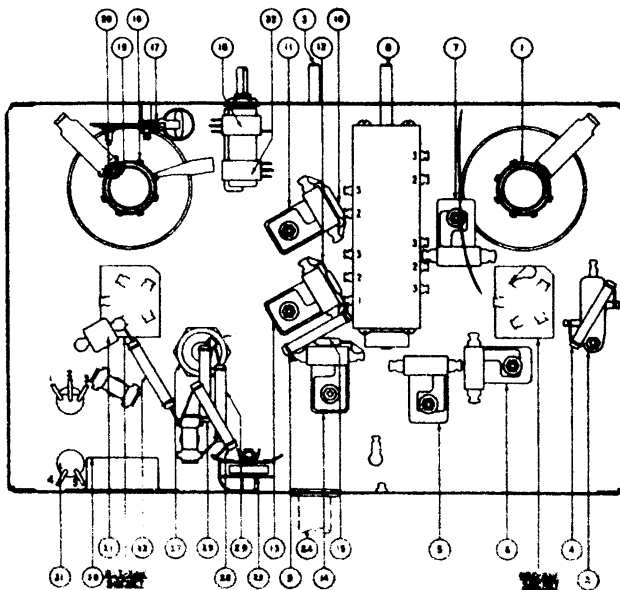
**These parts replaced on later production by .0018 mfd. condenser, part 6018.

No. on Figs. 1 and 2	Description	Part No.
(45)	Resistor (45,000 ohms) 50-60 cycles	5256
(46)	Resistor (99,000 ohms) 25-40 cycles	4411
(47)	Condenser (.5 mfd.)	3583
(48)	Resistor (51,000 ohms)	4518
(49)	Condenser (500 mmf.)	3910
(50)	R. F. Choke	03086
(51)	Condenser (250 mmf.)	3082
(52)	Resistor (240,000 ohms)	4410
(53)	Condenser (.25 mfd.)	4264
(54)	Pilot Light (Broadcast Unit)	3463
(55)	Condenser (.09 mfd. double)	4989-C
(56)	Oscillator Coil	03084
(57)	Condenser (410 mmf.)	5120
(58)	Compensating Condenser—Low Frequency	04000-F
(59)	Resistor (51,000 ohms)	4518
(60)	Resistor (5,000 ohms)	5310
(61)	Compensating Condenser—High Frequency —Part of Gang Condenser Assembly	4989-C
(62)	Condenser (.09 mfd. double)	4519
(63)	Condenser (110 mmf.)	4519
(64)	B. C. Resistor	03079
(65)	Resistor (13,000 ohms)	3766
(66)	Condenser (.05 mfd.)	3615-L
(67)	Voice Coil and Cone Assembly	02996
(68)	Field Coil Assembled with Pot.	02966
(69)	Output Transformer	2673
(70)	Tone Control	03140
(71)	Resistor (240,000 ohms)	4410
(72)	Condenser (.01 mfd.)	3903-L
(73)	Condenser (.015 mfd. double)	3793-K
(74)	"On-off" Switch	4095
(75)	Power Transformer (50-60 cycles)	5117
(76)	Power Transformer (25-40 cycles)	5118
(77)	Power Transformer (50-60, 230 volts)	5119
(78)	Electrolytic Condenser (6 mfd.) 50-60 cycles	4916
(79)	Electrolytic Condenser (10 mfd.) 25-40 cycles	5142
(80)	Choke	4819
(81)	Condenser (.09 mfd.) 50-60 cycles	4989-J
(82)	Condenser (.18 mfd.) 25-40 cycles	4989-K
(83)	Electrolytic Condenser (6 mfd.) 50-60 cycles	4916
(84)	Electrolytic Condenser (10 mfd.) 25-40 cycles	5142
(85)	Line Cord and Plug	L-943
(86)	Tube Shield	03987
(87)	Bezel (Broadcast)	5008
(88)	Bezel (Short Wave)	5178
(89)	Knob (Large)	03063
(90)	Knob (Small)	03064
(91)	Knob (On-Off Switch—Broadcast)	03437
(92)	Knob (Control Switch—Short Wave)	5811
(93)	Spring (For Small Knobs)	4147
(94)	Spring (For Large Knobs)	5262
(95)	Grid Clip	4897
(96)	Five Prong Socket Assembly	4956
(97)	Four Prong Socket Assembly	4955
(98)	Dial Complete (Broadcast)	03031
(99)	Dial Complete (Short Wave)	03890

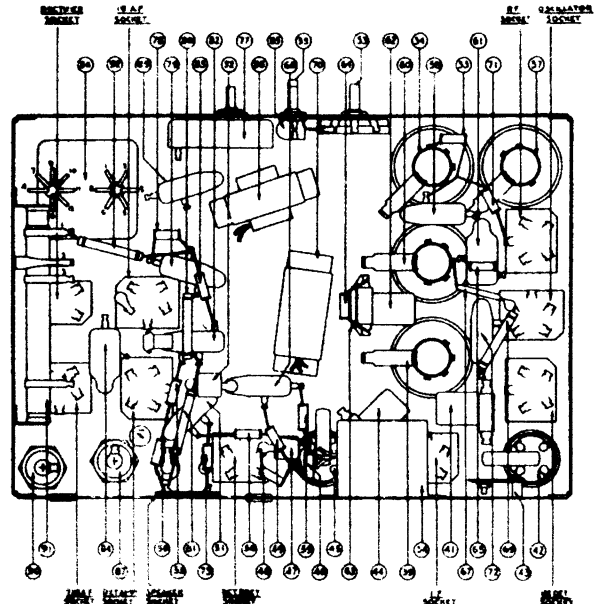
[illegible]

SPEAKER PLUG AND SOCKET
CONNECTIONS SHOWN —

MODEL 490



Short Wave Chassis.



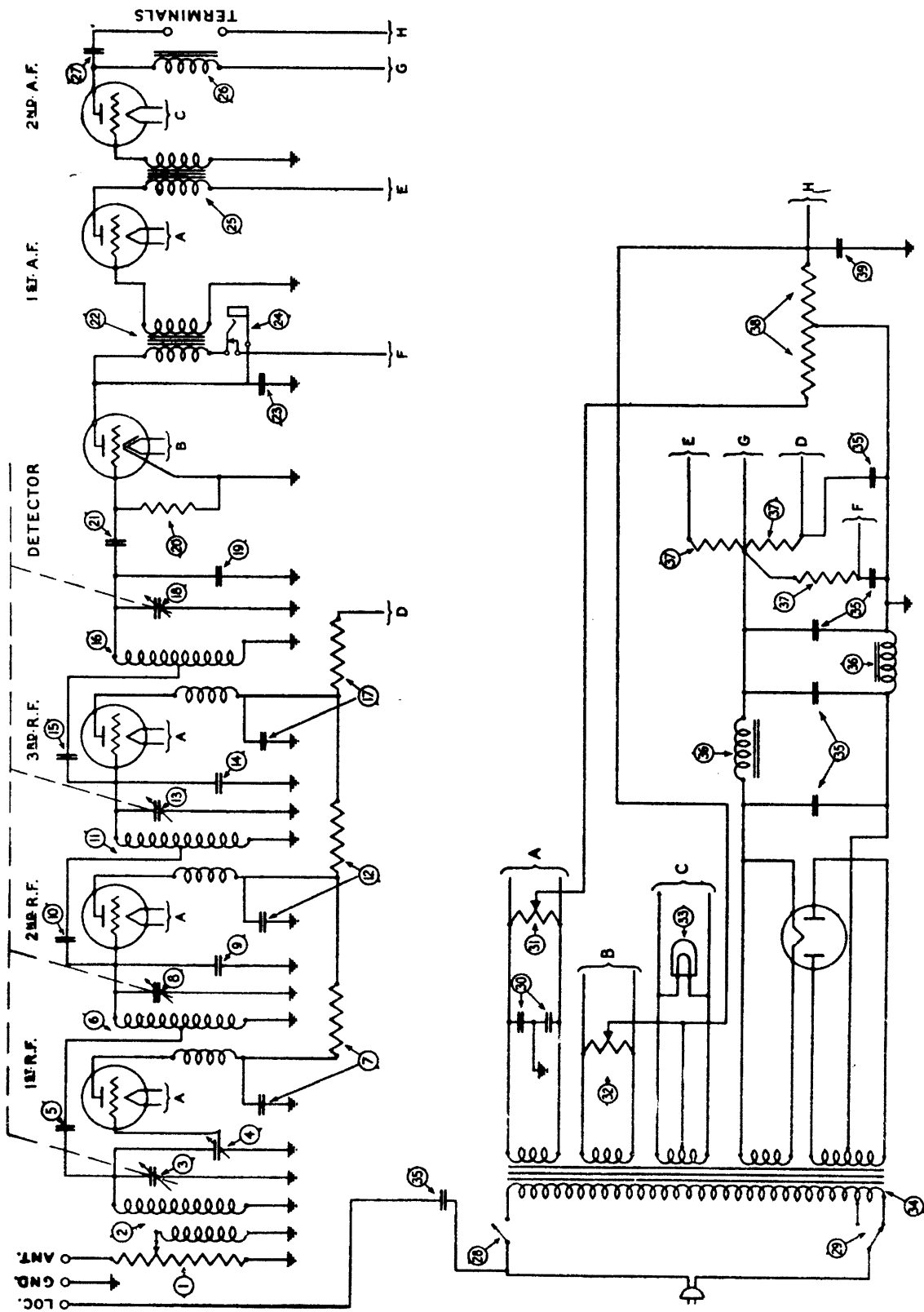
Broadcast Chassis.

REPLACEMENT PARTS MODEL 490

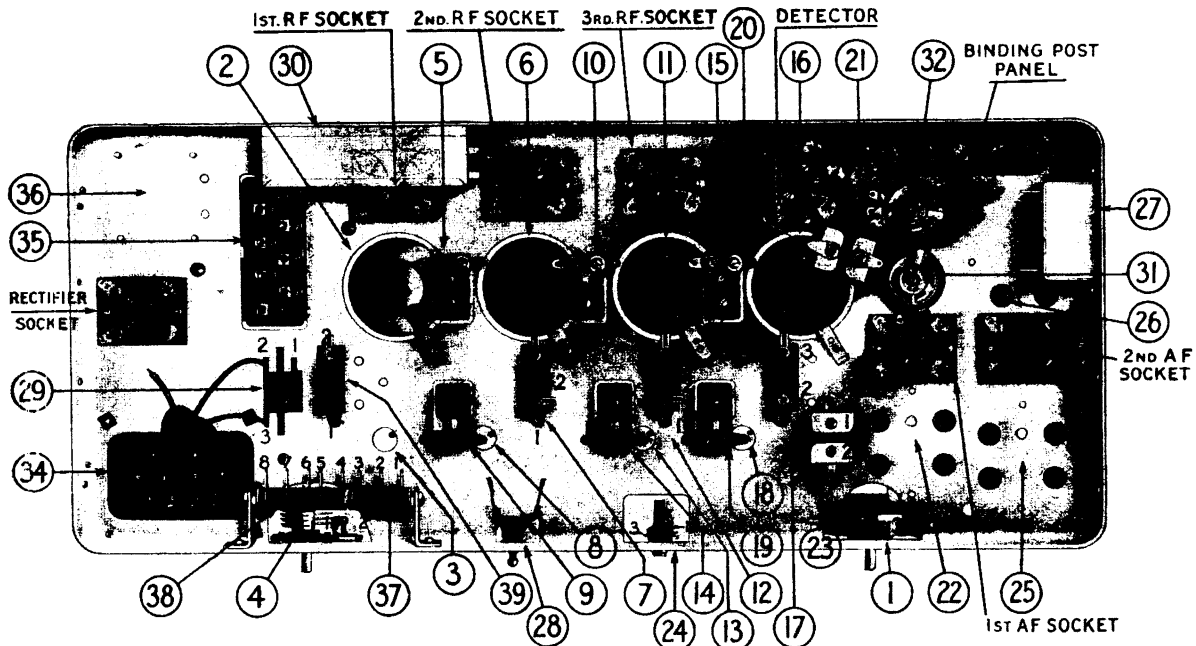
No. on Figs. 1 and 2	Description	Part No.
1	Oscillator Coil*	03734
2	By-pass Condenser (.05 mfd.)	3615-M
3	Gang Condenser Assembly	03602
4	Resistor (13,000 ohms)	3766
5	Compensating Condenser (19 MC end of Top Scale)	04000-E
6	Compensating Condenser (8.5 MC End of Center Scale)	04000-E
7	Compensating Condenser (3.6 MC End of Bottom Scale)	04000-E
8	Frequency Control Switch	03751
9	Resistor (240,000 ohms)	3768
10	Condenser (1,250 mmf.)**	5886
11	Compensating Condenser (8.5 MC End of Top Scale)**	04000-F
12	Condenser (800 mmf.)	5878
13	Compensating Condenser (3.6 MC End of Center Scale)	04000-F
14	Condenser (250 mmf.)	3082
15	Compensating Condenser (1.5 MC End of Bottom Scale)	04000-F
16	Detector Transformer*	03734
17	Frequency Filter	03662
18	Antenna Switch Assembled with 20	5796
19	Resistor (2 megohms) Assembled with 20	03879
20	Condenser (110 mmf.) Assembled with 19	03879
21	Condenser (250 mmf.)	3082
22	Resistor (99,000 ohms)	3767
23	R. F. Choke	03893
24	Shielded Cable	L-1278
25	Resistor (32,000 ohms)	3525
26	Resistor (32,000 ohms)	3525
27	Electrolytic Condenser (6 mfd.)	4916
28	Pilot Light (Short Wave Unit)	3463
29	Resistor (5,000 ohms)	3526
30	Plug	03913
31	Filament Transformer (50-60 cycles)	5906
32	(25-40 cycles)	5923
33	(80-60 cycles, 230 volts)	5924
34	On-off Switch (Assembled with 35)	5796
35	Resistor (10,000 ohms)	4412
36	First R. F. Transformer	03360
37	Gang Condenser Assembly (50-60 cycles)	03001
38	Gang Condenser Assembly (25-40 cycles)	03078
39	Compensating Condenser—First R. F.— Part of Gang Condenser Assembly	03014
40	Second R. F. Transformer	03014
41	Compensating Condenser—Second R. F.— Part of Gang Condenser Assembly	03015
42	First Detector Transformer	03015
43	Compensating Condenser—First Detector —Part of Gang Condenser Assembly	03015
44	Compensating Condenser—First I. F. Primary	04000-J
45	First I. F. Transformer	03009
46	Compensating Condenser—First I. F. Secondary	04000-J
47	Compensating Condenser—Second I. F. Primary	04000-L
48	Second I. F. Transformer	03345
49	Resistor (51,000 ohms)	4518
50	Condenser (110 mmf.)	4519
51	Resistor (51,000 ohms)	4518
52	Resistor (490,000 ohms)	4517
53	Resistor (99,000 ohms)	4411
54	Condenser (.01 mfd.)	3903-R
55	Condenser (250 mmf.)	3082
56	Volume Control	5366
57	By-pass Condenser (3—25 mfd.)	03325

No. on Figs. 1 and 2	Description	Part No.
58	Resistor (51,000 ohms)	4518
59	Resistor (70,000 ohms)	5385
60	Pilot Light (Broadcast Unit)	3463
61	Condenser (.05 mfd.)	3615-W
62	Resistor (490,000 ohms)	4517
63	Oscillator Coil	03016
64	Condenser (.09 mfd.)	4989-G
65	Compensating Condenser—Low Frequency	04000-B
66	Condenser (700 mmf.)	4520
67	Resistor (51,000 ohms)	4518
68	Resistor (5,000 ohms)	5310
69	Compensating Condenser—High Fre- quency—Part of Gang Condenser Assembly	4519
70	Condenser (110 mmf.)	3615-U
71	Condenser (.05 mfd.)	4237
72	Resistor (51,000 ohms)	03327
73	By-pass Condenser (1., 25., 1) 50-60 cycles	03624
74	By-pass Condenser (1., 25., 25) 25-40 cycles)	5385
75	Resistor (70,000 ohms)	3615-E
76	Condenser (.05 mfd.)	4518
77	Resistor (25,000 ohms)	02996
78	Voice Coil and Cone Assembly	02966
79	Speaker Field (Assembly with Pot)	2673
80	Output Transformer	03137
81	Tone Control	4410
82	Resistor (240,000 ohms) 50-60 cycles	4411
83	Resistor (99,000 ohms) 25-40 cycles	3903-P
84	Condenser (.01 mfd.)	3656
85	Resistor (25,000 ohms)	3656
86	Resistor (25,000 ohms) 50-60 cycles	4237
87	Resistor (50,000 ohms) 25-40 cycles	4410
88	Condenser (.01 mfd.)	3903-M
89	Resistor (240,000 ohms)	4410
90	Condenser (.015 mfd. Double)	3793-E
91	On-off Switch	4095
92	Power Transformer (50-60 cycles)	5362
93	Power Transformer (25-40 cycles)	5363
94	Power Transformer (50-60 cycles, 230 volts cycles)	5364
95	Electrolytic Condenser (6 mfd.) 50-60 cycles	4916
96	Electrolytic Condenser (10 mfd.) 25-40 cycles	5142
97	Choke	4819
98	By-pass Condenser (.09 mfd.) 50-60 cycles	4989-J
99	By-pass Condenser (.18 mfd.) 25-40 cycles	4989-K
100	Electrolytic Condenser (6 mfd.) 50-60 cycles	4916
101	Electrolytic Condenser (14 mfd.) 25-40 cycles	5725
102	B. C. Resistor	03457
103	Resistor (240,000 ohms) 50-60 cycles	3768
104	Resistor (490,000 ohms) 25-40 cycles	3769
105	Line Cord and Plug	L-943
106	Tube Shield (Large)	03982
107	Tube Shield (27 Type)	5387
108	Base (Broadcast)	5009
109	Base (Short Wave)	5176
110	Knob (Large)	03063
111	Knob (Small)	03064
112	Knob (On-Off Switch—Broadcast)	03437
113	Knob (Control Switch—Short Wave)	5811
114	Spring (For Small Knobs)	4147
115	Spring (For Large Knobs)	5262
116	Grid Clip	4897
117	Five Prong Socket Assembly	4956
118	Four Prong Socket Assembly	4955
119	Dial Complete (Broadcast)	03982
120	Dial Complete (Short Wave)	03982

Philco Model 511



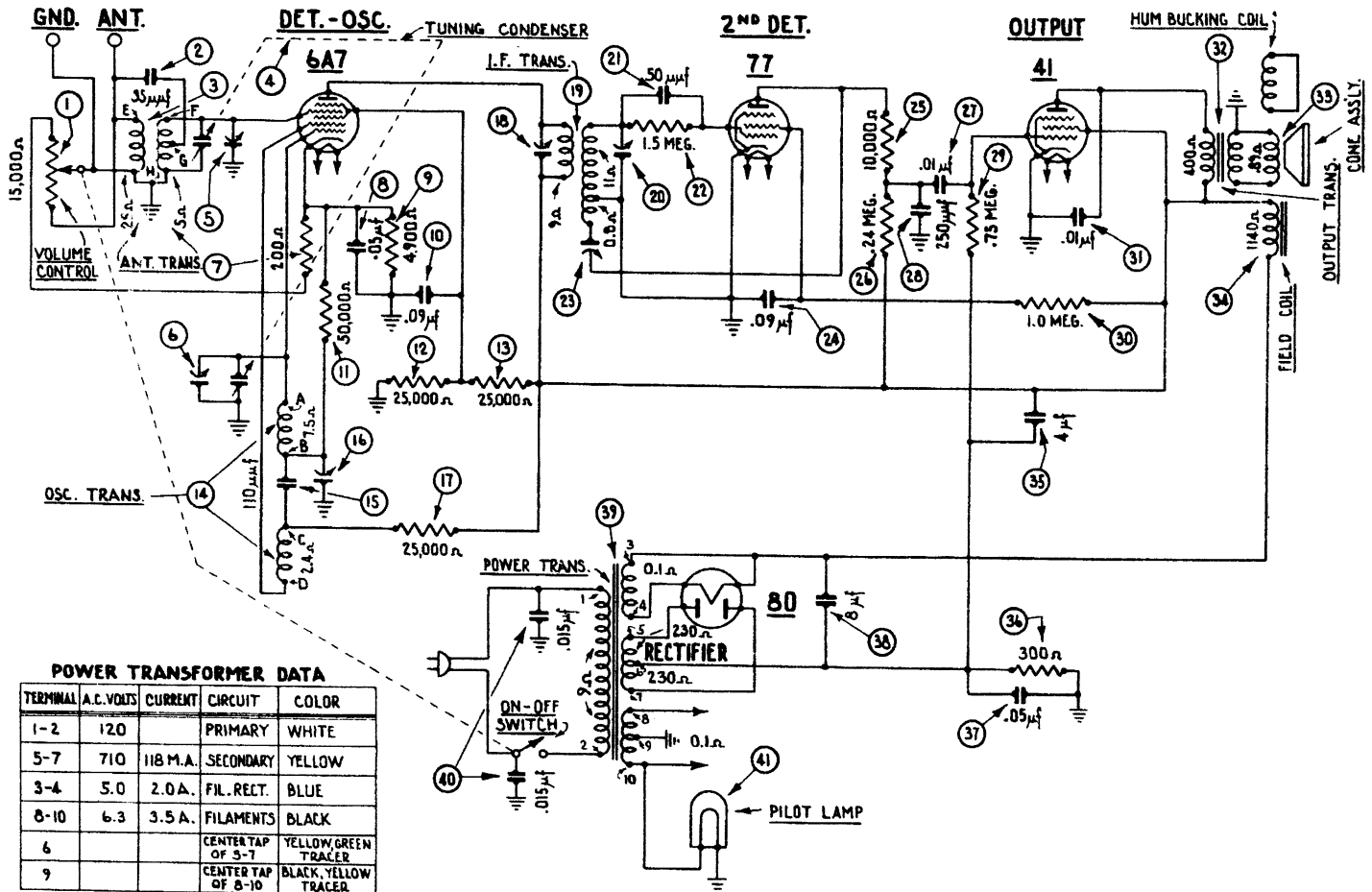
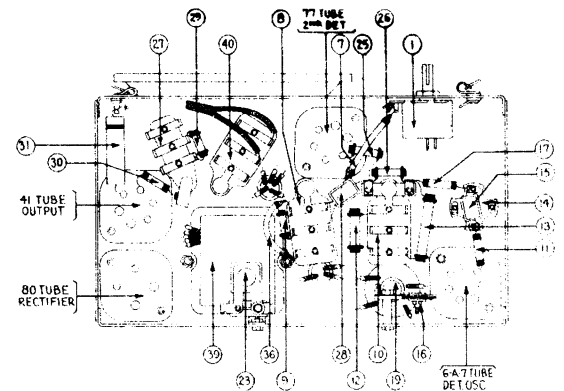
Philco Model 511



Replacement Parts for Model 511

NUMBER	NAME OF PART	FACTORY PART NUMBER (Order by this Number)
①	Volume Control	3076
②	R. F. Transformer (Antenna Tuning)	3075-B
① - ⑪ - ⑫	R. F. Transformer	3075-A
⑬	Range Control	3133
	Tuning Condenser (complete with drum and shield)	3001-B
⑭ - ⑮ - ⑯	Neutralizing Condenser	3025-A
⑰ - ⑱ - ⑲	Compensating Condenser	3025-B
⑲ - ⑳ - ㉑	By-Pass Condenser .1 mfd. with Plate Resistance Winding	3114-A
㉒	By-Pass Condenser .001 mfd.	3081
㉓	Filament By-Pass Condenser (2 sections .5 mfd.)	3080
㉔	Grid Leak	3083
㉕	Grid Condenser	3082
㉖ - ㉗	A. F. Transformer	3077
㉘	Phonograph Pick-Up Jack	3087
㉙	Output Filter Choke	3078
㉚	Output Filter Condenser .5 mfd.	3079
㉛	Power Switch - Toggle	3117
㉜	Primary Tap Switch	3118
㉝	6-ohm Hum Adjustor	3096
㉞	20-ohm Hum Adjustor	3086
㉟	Pilot Lamp	3105
	Pilot Lamp Socket Assembly	3043-A
	Tube Socket Assembly - 4-hole	3051-A
	Tube Socket Assembly - 5-hole	3157-A
	Tube Socket Insulator 4-hole - red	3124
	Tube Socket Insulator 4-hole - brown	3070
	Tube Socket Insulator 5-hole - brown	3158
㊱	Power Transformer - 50 - 60 cycle	3073
㊲	Power Transformer - 25 - 40 cycle	3106
㊳	Filter Condenser Block - 50 - 60 cycle	3108
㊴	Filter Condenser Block - 25 - 40 cycle	3109
㊵	Filter Choke Coils	Z-224
㊶ - ㊷	B-C 5-section Resistor	3088 (A)
㊸ - ㊹	B-C 4-Section Resistor	3088 (W)
㊺	B Resistor 70,000 ohms	Z-129
㊻	By-Pass Condenser .1 mfd	3114
	Terminal Panel Assembly	3084-A
	Control Knob - Tuning Condenser	3035-A
	Control Knob - Volume and Range Control	3036-A
	A.C. Attachment Cord and Plug	L-943-A
	Wiring Cable	L-946
	Speaker Tone Filter	2946-B
	Fibre Adjusting Wrench	3168

MODEL 600



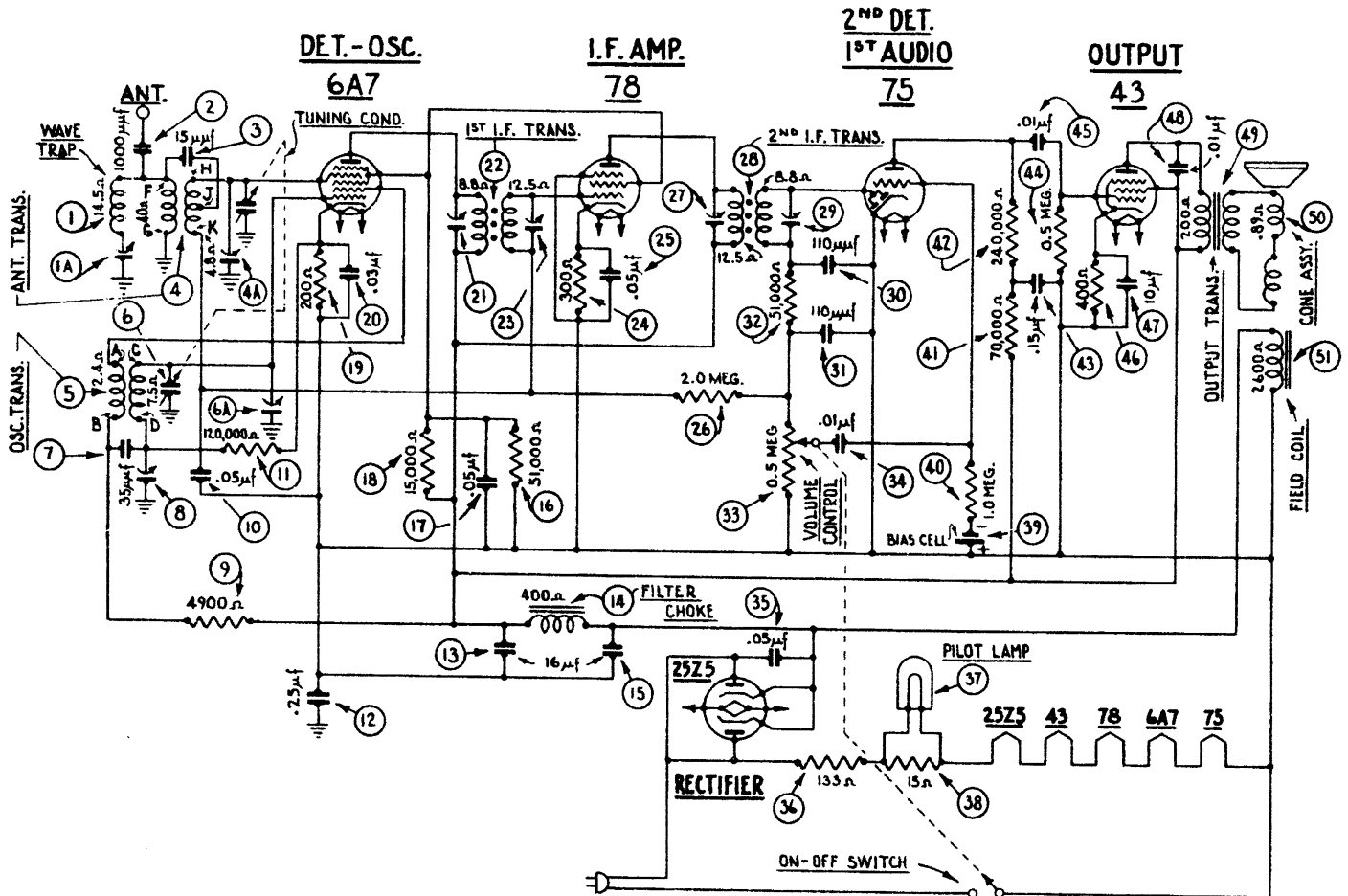
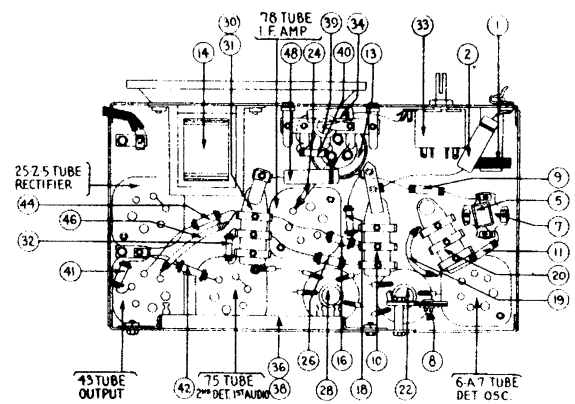
Replacement Parts for Model 600

Schematic Number	Part and Description	Part No.
①	Volume Control	33-5152
②	Condenser (35 Mmf. Mica)	30-1044
③	Ant. Transformer	32-2030
④	Tuning Condenser	31-1755
⑤	Compensator (Det. 1500 K.C.)	Part of ①
⑥	Compensator (Osc. 1500 K.C.)	Part of ①
⑦	Resistor (200 ohm)	7217
⑧	Condenser (.05 mf. Twin Bakelite)	3615-DG
⑨	Resistor (4900 ohm, 1/2 watt)	33-249334
⑩	Condenser (.09 mf. Twin Bakelite)	4989-DG
⑪	Resistor (51,000 ohm, 1/4 watt)	33-351143
⑫	Resistor (25,000 ohm, 1/2 watt)	33-325343
⑬	Resistor (25,000 ohm, 1 watt)	33-325443
⑭	Osc. Transformer	32-2043
⑮	Condenser (110 mmf. Mica)	30-1031
⑯	Compensator (Osc. Series) (600 K.C.)	04000-S
⑰	Resistor (25,000 ohm, 1/2 watt)	33-325343
⑱	Compensator (I.F. Pri) (460 K.C.)	Part of ②
⑲	I.F. Transformer	33-3023

Schematic Number	Part and Description	Part No.
⑳	Compensator (I.F. Sec.) (460 K.C.)	Part of ⑲
㉑	Condenser (50 mmf. Mica)	30-1029
㉒	Resistor (1.5 meg., 1/4 watt)	33-515133
㉓	Sensitivity Control	31-6086
㉔	Condenser (.09 mf.)	Part of ⑲
㉕	Resistor (10,000 ohm, 1/4 watt)	33-310133
㉖	Resistor (240,000 ohm, 1/4 watt)	33-424143
㉗	Condenser (.01 mf. Bakelite)	3903-SC
㉘	Condenser (.00025 mf.) (Mica)	30-1032
㉙	Resistor (750,000 ohm, 1/4 watt)	33-475133
㉚	Resistor (1.0 meg., 1/4 watt)	33-510143
㉛	Condenser (.01 mf.) (Tubular)	30-4124
㉜	Output Transformer	32-7041
㉝	Voice Coil Cone Assy.	36-3029
㉞	Field Coil Assy.	36-3593
㉟	Elec. Condenser (4-.8 mf.)	30-2149
㊱	Resistor (300 ohm)	33-3121
㊲	Condenser (.05 mf.)	Part of ㉞
㊳	Elec. Condenser (8.0 mf.)	Part of ㉞
㊴	Power Transformer (110 V., 60 Cycle)	32-7552
㊵	Condenser (.015 mf. Twin)	3793-DG

Schematic Number	Part and Description	Part No.
	Power Transformer (230 V., 50-60 Cycle)	32-7554
	Power Transformer (110 V., 25 Cycle)	32-7553
	Tube Shield Body	28-2726
	Tube Shield Base	28-2725
	Tube Socket (6-prong)	27-6036
	Tube Socket (7-prong)	27-6037
	Tube Socket (4-prong)	27-6044
	Volume Control Mtg. Nut	W-648-A
	Chassis Mtg. Screw	W-1587-A
	Chassis Mtg. Nut	W-124-A
	Chassis Mtg. Washer	W-410-A
	Chassis Mtg. Washer	W-291-A
	Baffle	27-8232
	Dial	27-5179
	Knob (Station Selector)	27-4302
	Knob (Volume, On-Off)	27-4273
	Bottom Shield Assy.	29-3795
	Bottom Shield Ins.	27-8122
	Pointer	27-7933
	Pilot Lamp Bracket Assy	38-7581

MODEL 602



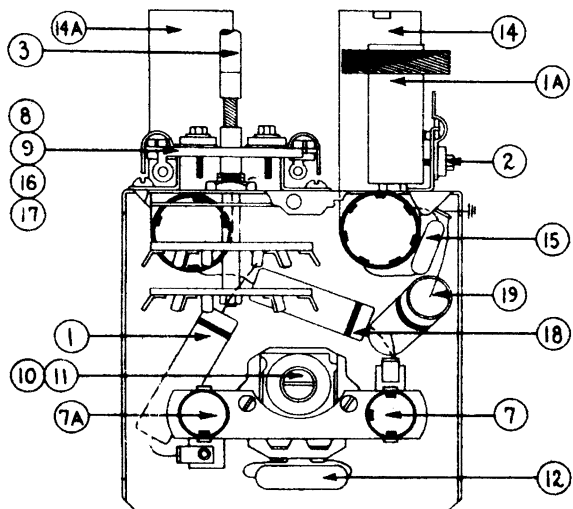
Replacement Parts for Model 602

Schematic Number	Part and Description	Part No.
1	Wave Trap Coil.....	32-2007
1a	Wave Trap Compensator.....	040000D
2	Condenser (.001 Mf. Tubular).....	30-4201
3	Condenser (.15 mmf. Mica).....	30-1030
4	Ant. Transformer.....	32-2003
4a	Compensator (Osc. 1800 KC.).....	32-2041
5	Osc. Transformer.....	32-2041
6	Tuning Condenser.....	31-1794
6a	Compensator (Ant. 1800 KC.).....	31-1794
7	Condenser (.35 mmf. Mica).....	30-1044
8	Compensator (Osc. Series).....	040000S
9	Resistor (4900 ohm, 1/2 watt).....	33-249333
10	Condenser (.05 Mf. Bakelite).....	3613-OSU
11	Resistor (120,000, 1/2 watt).....	33-412334
12	Condenser (.25-.05-.05-.15-.01 mf.).....	30-4410
13	Elec. Condenser (10-16-10 mf.).....	30-2148
14	Filter Choke.....	32-7544
15	Elec. Condenser (10 mf.).....	Part of 13
16	Resistor (51,000 ohm, 1/4 watt).....	33-351143
17	Condenser (.05 mf.).....	Part of 13
18	Resistor (15,000 ohm, 1/4 watt).....	33-315133
19	Resistor (200 ohm wirewound).....	7217
20	Condenser (.03 mf. Bakelite).....	8318-OSU
21	Compensator (1st I.F. Pri.).....	Part of 20

Schematic Number	Part and Description	Part No.
22	Resistor (300 ohm wirewound).....	33-3010
23	Condenser (.05 mf.).....	Part of 22
24	Resistor (2.0 meg., 1/4 watt).....	33-520143
25	Compensator (2nd I.F. Pri.).....	Part of 24
26	2nd I.F. Transformer.....	32-2006
27	Compensator (2nd I.F. Sec.).....	Part of 26
28	Condenser (.00011 mf. twin).....	8035-ODU
29	Condenser (.00011 mf.).....	Part of 28
30	Resistor (51,000 ohm, 1/4 watt).....	33-351143
31	Volume Control (.05 meg.).....	33-5145
32	Condenser (.01 mf. Tubular).....	30-4145
33	Condenser (.05 mf.).....	Part of 32
34	B.C. Resistor (133-15 ohm).....	33-3225
35	Pilot Lamp.....	34-2068
36	Resistor (15 ohm).....	Part of 35
37	Bias Cell.....	41-8009
38	Resistor (1.0 meg., 1/4 watt).....	33-510144
39	Resistor (70,000 ohm, 1/4 watt).....	33-370133
40	Resistor (240,000 ohm, 1/4 watt).....	33-424143
41	Condenser (.15 mf.).....	Part of 40
42	Resistor (490,000 ohm, 1/4 watt).....	33-449143
43	Condenser (.01 mf.).....	Part of 42
44	Resistor (400 ohm wirewound).....	7217
45	Flexile.....	33-3122
46	Flex. Condenser (10 mf.).....	Part of 45

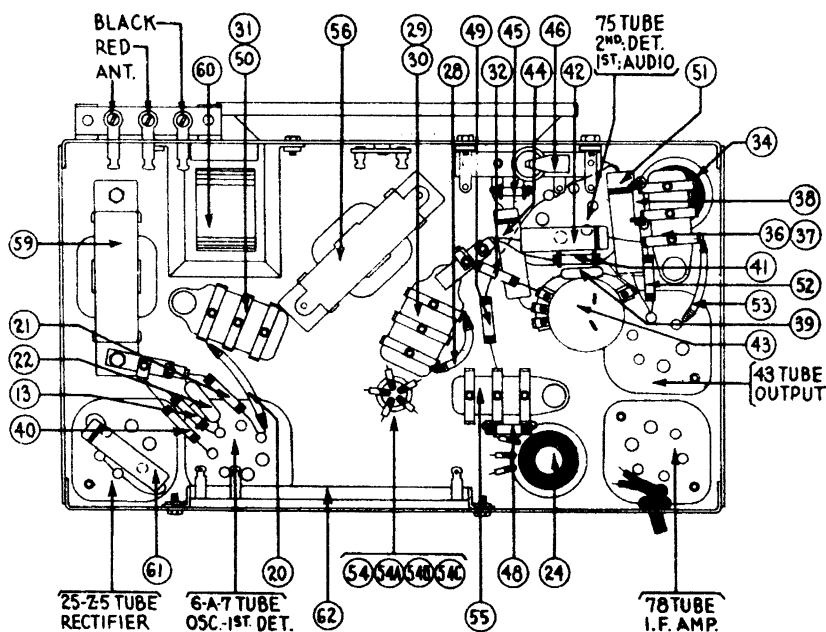
Schematic Number	Part and Description	Part No.
47	Voice Coil Cone Assy.....	36-3029
48	Field Coil Assy.....	36-3040
49	Volume Control Mtg. Nut.....	W-684-A
50	B.C. Resistor Mtg. Screw.....	W-650-A
51	B.C. Resistor Mtg. Nut.....	W-95-A
52	Tube Shield Base.....	28-2725
53	Tube Shield Body.....	28-2726
54	Chassis Mtg. Screw.....	W-1587-A
55	Chassis Mtg. Nut.....	W-124-A
56	Chassis Mtg. Washer.....	W-410-A
57	Chassis Mtg. Washer.....	W-291-A
58	Speaker Baffle.....	40-5840
59	Dial.....	27-5188
60	Pointer.....	27-8236
61	Shield Bottom Assy.....	29-3605
62	Shield Bottom Insulator.....	27-8182
63	Tube Socket (6 prong).....	27-6036
64	Tube Socket (7 prong).....	27-6037
65	Knob (Volume, On-Off).....	27-4273
66	Knob (Station Selector).....	27-4302
67	Elec. Condenser Support.....	6440
68	Elec. Condenser Insulator.....	27-7836
69	Pilot Lamp Bracket Assy.....	38-7313
70	Ant. Coil Mtg. B.....	30-7544





Rear View of R. F. Unit.

Fig. 6



Base View of Chassis.

Fig. 6A

Model 604

Schematic Number	Part and Description	Part No.	List Price
1	Condenser (.001 Mfd. Tubular)	30-4201	\$0.20
1a	Wave Trap Coil	32-2093	.50
2	Wave Trap Compensator (460 K.C.)	31-6084	.15
3	Wave Band Switch Assy.	38-7631	1.50
4	Pilot Lamp (S.W. 6.3 V.)	34-2068	.16
5	Pilot Lamp (Bdest. 6.3 V.)	34-2068	.16
6	Tuning Condenser	31-1796	3.25
7	Oscillator Transformer (Bdest.)	32-2047	.45
7a	Oscillator Transformer (S.W.)	32-2048	.45
8	Compensator (Osc. 1600 K.C.)	31-6085	.60
9	Compensator (Osc. 18.0 M.C.)	Part of 2	
10	Compensator (Osc. series, screw. 580 K.C.)	31-6027	.70
11	Compensator (Osc. series, nut. 6.0 M.C.)	Part of 10	
12	Condenser (.00325 Mfd. Mica)	30-1061	.45
13	Resistor (13,000 ohms, 1/4 watt)	33-313133	.20
14	Antenna Transformer (Bdest.)	32-2045	1.10
15	Antenna Transformer (S.W.)	32-2046	.55
16	Condenser (15 Mmfd., Mica)	30-1030	.20
17	Compensator (Ant., 1400 K.C.)	Part of 2	
18	Compensator (Ant., 18.0 M.C.)	Part of 2	
19	Condenser (.05 Mfd., Tubular)	30-4020	.20
20	Condenser (.15 Mfd., Tubular)	30-4191	.25
21	Resistor (200 ohms, wire wound)	7217	.20
22	Resistor (120,000 ohms, 1/2 watt)	33-412334	.20
23	Condenser (250 Mmfd., Mica)	30-1032	.25
24	Compensator (1st I.F. Pri. 460 K.C.)	Part of 2	
25	1st I.F. Transformer	32-2049	1.50
26	Compensator (1st I.F. Sec. 460 K.C.)	Part of 2	
27	Eliminated By Production Changes		
28	Resistor (300 ohms, wire wound)	33-3010	.20
29	Condenser (.1 Mfd. Twin Bakelite)	4989-ODU	.40
30	Condenser (.1 Mfd. Twin Bakelite)	Part of 29	
31	Condenser (.1 Mfd. Twin Bakelite)	4989-ODU	.40
32	Resistor (2.0 Meg., 1/4 watt)	33-520143	.20
33	Compensator (2nd I.F. Pri. 460 K.C.)	Part of 2	
34	2nd I.F. Transformer	32-2059	3.00
35	Compensator (2nd I.F. Sec. 460 K.C.)	Part of 2	
36	Condenser (110 Mmfd., Twin Bakelite)	8035-ODU	.25
37	Condenser (110 Mmfd.)	Part of 36	
38	Resistor (51,000 ohms, 1/4 watt)	33-351143	.20
39	Condenser (600 Mmfd., Mica)	30-1049	.25
40	Resistor (25,000 ohms, 1/2 watt)	33-325144	.20
41	Resistor (32,000 ohms, 1/2 watt)	33-332334	.20
42	Condenser (.01 Mfd. Tubular)	30-4124	.25
43	Volume Control Assy. (500,000 ohms)	38-7630	1.45
44	Condenser (.01 Mfd. Tubular)	30-4124	.25

Schematic Number	Part and Description	Part No.	List Price
45	Resistor (1.0 Meg., 1/4 watt)	33-510143	\$0.20
46	Bias Cell (1.0 volt)	41-8009	.20
47	Eliminated By Production Changes		
48	Resistor (70,000 ohms, 1/4 watt)	33-370133	.20
49	Resistor (240,000 ohms, 1/2 watt)	33-424344	.20
50	Condenser (.01 Mfd.)	Part of 50	
51	Condenser (.01 Mfd. Tubular)	30-4169	.20
52	Resistor (490,000 ohms, 1/2 watt)	33-449344	.20
53	Resistor (400 ohms, wire wound)	33-3122	.25
54	Elec. Condensers (10.0 Mfd., 8.0 Mfd., 16.0 Mfd., 16 Mfd.)	30-2154	3.25
55	Condenser (.01 Mfd. Bakelite)	3903-OSU	.25
56	Output Transformer	32-7568	.95
57	Cone Assy.	36-3029	.60
58	Field Coil Assy.	36-3620	2.75
59	Filter Choke	32-7569	1.30
60	Filter Choke	32-7572	1.00
61	Condenser (.05 Mfd. Tubular)	30-4020	.20
62	B. C. Resistor (15 133 ohms)	33-3235	.55
63	R. F. Coil Housing	29-3755	.15
64	R. F. Coil Housing, Side	29-3770	.10
65	R. F. Coil Housing, Back	29-3814	.05
66	Bias Cell Panel Assy.	38-7436	.15
67	B. C. Resistor Mtg. Screw	W-650-A	.40C
68	B. C. Resistor Mtg. Nut	W-95-A	.30C
69	Tube Shield Body	28-2726	.10
70	Tube Shield Base	28-2725	.03
71	Socket (6-prong)	27-6036	.11
72	Socket (7-prong)	27-6037	.11
73	Volume Control Mtg. Nut	W-684-A	1.25C
74	Volume Control Shaft	Part of 73	
75	Wave Switch Shaft	Part of 74	
76	Dial Assembly	31-1799	
77	Shaft Centering Plate	29-3805	.10
78	Pilot Lamp Bracket Assy.	38-7616	.80
79	Chassis Mtg. Screw	W-1587-A	.75C
80	Chassis Mtg. Nut	W-124-A	.35C
81	Chassis Mtg. Washer	W-151	.20C
82	Chassis Mtg. Washer	W-1335	.80C
83	Chassis Mtg. Washer	W-291	.40C
84	Knob (Tuning)	27-4206	.12
85	Knob (Slow Speed Tuning)	27-4207	.10
86	Knob (Wave Band Switch, Vol. Control)	27-4208	.10
87	Shield Plate Assy.	29-3769	.40
88	Shield Plate Ins.	27-8214	1.15
89	Baffle Assy	40-5918	

PRICES SUBJECT TO CHANGE WITHOUT NOTICE

PHILCO
Parts and Service Division

DET. OSC.

I.F.

2ND DET. 1ST AUDIO

OUTPUT

RECTIFIER

I.F. = 460 KC.

ALL SWITCH SECTIONS SHOWN IN POSITION NO. 1

NUMBERS INDICATE RELATIVE POSITIONS OF SWITCH SECTIONS FROM FRONT OF CHASSIS

ANT. GND. BLACK. RED.

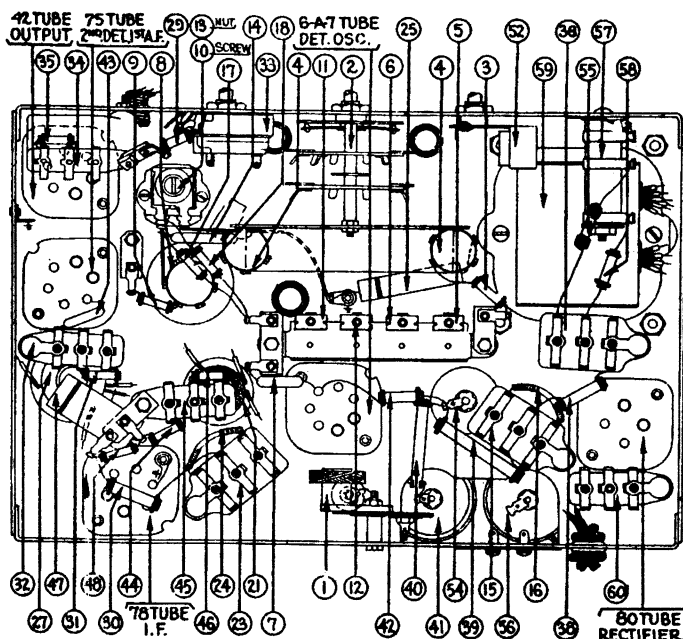
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59

I.F.=460 KC.

ALL SWITCH SECTIONS
SHOWN IN POSITION NO.1

NUMBERS INDICATE RELATIVE POSITIONS OF
SWITCH SECTIONS FROM FRONT OF CHASSIS

Replacement Parts—Model 610

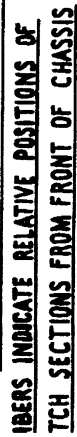


Description	Part No.
① Wavetrap.....	38-6850
② Waveband Switch.....	42-1112
③ Resistor (5000 ohms) (Green, Black, Red).....	6096
④ Antenna Transformer.....	32-1669
⑤ Compensating Condenser (Antenna, Standard).....	Part of 31-6047
⑥ Compensating Condenser (Antenna, S.W.).....	Part of 31-6047
⑦ Condenser (.00025 Mfd. Mica).....	5858
⑧ Oscillator Transformer.....	32-1670
⑨ Resistor (20 ohms) (Red, Black, Black).....	33-1206
⑩ Compensating Condenser (Osc. L.F. Standard) (Screw).....	Part of 31-6027
⑪ Compensating Condenser (Osc. H.F., Standard).....	Part of 31-6047
⑫ Compensating Condenser (Osc. S.W., H.F. End).....	Part of 31-6047
⑬ Compensating Condenser (Osc. S.W., L.F. End) (Nut).....	Part of 31-6027
⑭ Condenser (.00225 Mfd. Mica).....	30-1055
⑮ Condenser (.09 Mfd. Twin Bakelite Block).....	4989-DG
⑯ Resistor (300 ohms Flexible) (Orange, Black, Brown).....	33-3010
⑰ Resistor (50000 ohms) (Green, Brown, Orange).....	6098
⑱ Resistor (25000 ohms) (Red, Green, Orange).....	33-1013
⑲ Tuning Condenser Assembly.....	31-1528
⑳ Compensating Condenser (1st I.F. Primary).....	Part of ⑳
㉑ 1st I.F. Transformer.....	32-1671
㉒ Compensating Condenser (1st I.F. Secondary).....	Part of ㉑
㉓ Condenser (.09 Mfd., and .01 Mfd. Bakelite Block).....	4989-FU
㉔ Resistor (400 ohms Flexible) (Yellow, Black, Brown).....	33-3016

Description	Part No.
㉕ Condenser (.05 Mfd. Tubular).....	30-4020
㉖ Compensating Condenser (2nd I.F. Primary).....	Part of ㉗
㉗ 2nd I.F. Transformer.....	32-1672
㉘ Compensating Condenser (2nd I.F. Secondary).....	Part of ㉗
㉙ Resistor (2 Megs.) (Red, Black, Green).....	33-1025
㉚ Resistor (1000 ohms) (Brown, Black, Red).....	5837
㉛ Resistor (50000 ohms) (Green, Brown, Orange).....	6098
㉜ Condenser (.00011 Twin Bakelite Block).....	8035-DG
㉝ Volume Control & On-Off Switch.....	33-5106
㉞ Condenser (.01 Mfd. Bakelite Block).....	3903-SU
㉟ Resistor (1 Meg.) (Brown, Black, Green).....	33-1096
㊱ Condenser (.1 Mfd. Twin Bakelite Block).....	4989-DG
㊲ Pilot Lamp.....	34-2064
㊳ Resistor (50000 ohms) (Green, Brown, Orange).....	4237
㊴ Resistor (10000 ohms) (Brown, Black, Orange).....	3524
㊵ Resistor (25000 ohms) (Red, Green, Orange).....	3656
㊶ Condenser (Electrolytic—16 Mfd.).....	30-2118
㊷ Resistor (32000 ohms) (Orange, Red, Orange).....	5279
㊸ Condenser (.00011 Mfd. Mica).....	30-1031
㊹ Resistor (.1 Meg.) (Brown, Black, Green).....	6099
㊺ Condenser (.015 Mfd., Bakelite Block).....	3793-SU
㊻ Resistor (.5 Meg.) (Yellow, White, Yellow).....	6097
㊼ Condenser (.1 Mfd. Tubular).....	30-4170
㊽ Resistor (.1 Meg.) (White, White, Yellow).....	6099
㊾ Output Transformer.....	32-7019
㊿ Cone & Voice Coil Assembly (P-27 Speaker).....	02861
㉑ Condensers (in Tone Control).....	Part of ㉒
㉒ Tone Control.....	30-4318
㉓ Field Coil & Pot Assembly (P-27 Speaker).....	36-3341
㉔ Condenser (Electrolytic—8 Mfd.).....	30-2025
㉕ Resistor (750000 ohms) (Violet, Green, Yellow) (½ Watt).....	33-1203
㉖ Condenser (Electrolytic) (8 Mfd.).....	30-2025
㉗ Resistor (B.C. Wire-wound, 235 ohms, 25 ohms).....	33-3037
㉘ Resistor (50000 ohms) (Green, Brown, Orange).....	6098
㉙ Power Transformer (110 volts 60 cycles).....	32-7381
(110 volts 25 cycles).....	32-7382
(230 volts 50 cycles).....	32-7383
㉚ Condenser (.015 Mfd. Twin Bakelite Block).....	3793-DG
㉛ Dial Assembly.....	31-1539
㉜ Tube Shield Body.....	28-2726
㉝ Tube Shield Base.....	28-2725
㉞ Four Prong Socket.....	27-6034
㉟ Six Prong Socket.....	27-6036
㊱ Seven Prong Socket.....	27-6037
㊲ Knob (Station Selector).....	27-4206
㊳ Knob (Fine Tuning).....	27-4207
㊴ Knob (Volume, Waveband and Tone Control).....	27-4208
㊵ Bezel.....	27-2928
㊶ Bezel Glass.....	27-7887

(Later Production)

1st I. F.



1.F=460 KC.

MODEL 610

Later 1935 Production Runs

This sheet also covers the Philco Radio-Phonograph 610PF. All circuit and part number changes up to date have been included.

Beginning with run No. 9 the grid bias arrangement for the 6A7 1st detector and 78 I.F. was changed. A fixed bias

from the B.C. resistor is fed through the AVC circuit to the grids of these tubes.

Beginning with run No. 11 the oscillator circuit was changed to series feed to eliminate possibilities of failure at 6.0 mc.

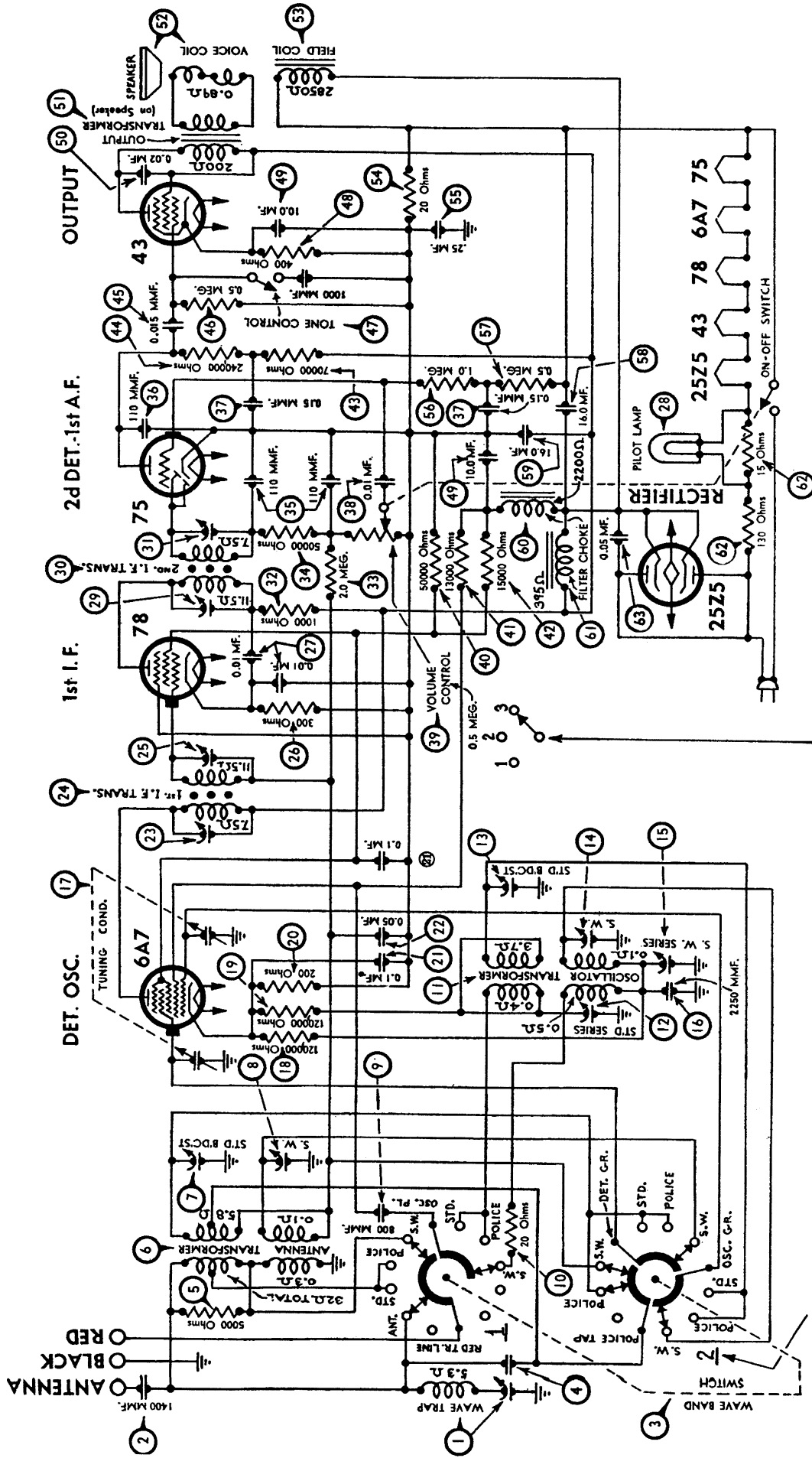
Beginning with run No. 14 the dial mask assembly was changed to the glowing arrow wave band indicator type.

PARTS LIST

Description	Part No.
① Wave:rap	38-6777
② Waveband Switch	42-1152
③ Antenna Transformer	32-1669
④ Compensating Condenser (Antenna, Standard)	
Part of 31-6047	
⑤ Compensating Condenser (Antenna, S.W.)	
Part of 31-6047	
⑦ Condenser (.00025 Mfd. Mica).....	30-1032
⑧ Oscillator Transformer	32-1973
⑩ Compensating Condenser (Osc. L.F. Standard)	
(Screw)	Part of 31-6027
⑪ Compensating Condenser (Osc. H.F., Standard)	
Part of 31-6047	
⑫ Compensating Condenser (Osc. S.W., H.F. End)	
Part of 31-6047	
⑬ Compensating Condenser (Osc. S.W., L.F. End)	
(Nut)	Part of 31-6027
⑭ Condenser (.00225 Mfd. Mica).....	30-1055
⑮ Resistor (50000 ohms) (Green, Brown, Orange)	6098
⑯ Resistor (25000 ohms) (Red, Green, Orange)..	33-1013
⑰ Tuning Condenser Assembly.....	31-1740
⑲ Compensating Condenser (1st I.F. Primary)...	Part of ⑪
⑳ 1st I.F. Transformer.....	32-1671
㉑ Compensating Condenser (1st I.F. Secondary)..	Part of ⑪
㉒ Condenser (.05 Mfd. Tubular).....	30-4020
㉓ Compensating Condenser (2nd I.F. Primary)...	Part of ⑪
㉔ 2nd I.F. Transformer.....	32-1672
㉕ Compensating Condenser (2nd I.F. Secondary)..	Part of ⑪
㉖ Resistor (2 Megs.) (Red, Black, Green)....	33-1188
㉗ Resistor (50000 ohms) (Green, Brown, Orange)	6098
㉘ Condenser (.00011 Twin Bakelite Block).....	8035-DG
㉙ Volume Control & On-Off Switch.....	33-5106
㉚ Condenser (.01 Mfd. Bakelite Block).....	3903-SU
㉛ Resistor (1 Meg.) (Brown, Black, Green)....	33-1096
㉜ Condenser (.1 Mfd. Twin Bakelite Block).....	4989-DG
㉝ Pilot Lamp	34-2039
㉞ Resistor (50000 ohms) (Green, Brown, Orange)	4237
㉟ Resistor (9000 ohms) (Black, White, Orange)..	33-1215
㊱ Resistor (25000 ohms) (Red, Green, Orange)..	3656
㊲ Condenser (Electrolytic—16 Mfd.).....	30-2118
㊳ Resistor (32000 ohms) (Orange, Red, Orange)..	5279
㊴ Resistor (.1 Meg.) (Brown, Black, Green)....	6099
㊵ Condenser (.015 Mfd. Bakelite Block).....	3793-SU
㊶ Resistor (.5 Meg.) (Yellow, White, Yellow)....	6097

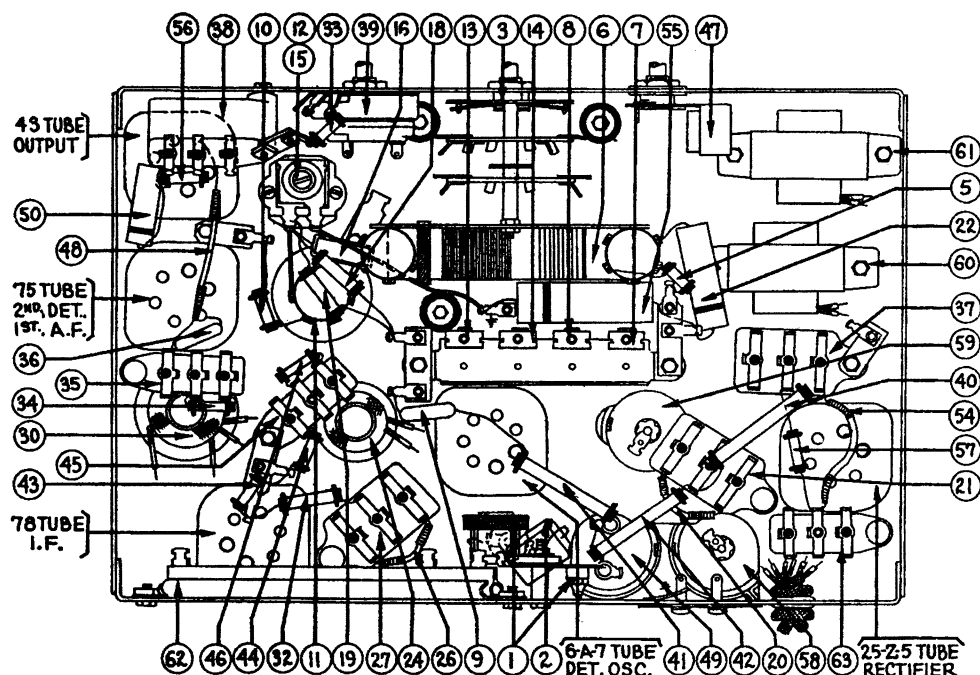
Description	Part No.
㊷ Condenser (.1 Mfd. Tubular).....	30-4170
㊸ Resistor (.1 Meg.) (White, White, Yellow)....	6099
㊹ Output Transformer	32-7019
㊺ Cone & Voice Coil Assembly (P-27 Speaker)...	02861
㊻ Condensers (in Tone Control).....	Part of ㉑
㊼ Tone Control	30-4318
㊽ Field Coil & Pot Assembly (P-27 Speaker).....	36-3341
㊾ Condenser (Electrolytic—8 Mfd.).....	30-2025
㊿ Resistor (750000 ohms) (Violet, Green, Yellow)	
(1/4 Watt)	33-1203
① Condenser (Electrolytic) (8 Mfd.).....	30-2025
②a Resistor (1. Megohm) (Brown, Black, Green).	33-1096
③ Resistor (B.C. Wire-wound, 22 ohms, 25 ohms,	
210 ohms).....	33-3222
④ Resistor (50000 ohms) (Green, Brown, Orange)	6098
⑤ Power Transformer (110 volts, 60 cycles).....	32-7381
(110 volts, 25 cycles).....	32-7382
(230 volts, 50 cycles).....	32-7383
⑥ Condenser (.015 Mfd. Twin Bakelite Block)...	3793-DG
⑦ Pickup Head	35-2014
⑧ Hum Bucking Coil.....	32-1940
⑨ Resistor (51,000 ohm).....	6098
⑩ Resistor (20,000 ohm).....	33-1178
⑪ Condenser (.025 mf.).....	7653-SU
⑫ Phono. Radio Switch & Cable Assy.....	35-3014
⑬ Phono. Radio Motor (115 V., 60 cycles).....	35-1116
⑭ Phono. Radio Motor Switch.....	4535
Glowing Arrow Mask	27-5162
Glowing Arrow Screen	27-5161
Mask Arm	29-3274
Link	29-3285
Coupling	29-3586
Screen Bracket Assy.....	31-1745
Dial Mask	27-5137
Dial Assembly	31-1539
Tube Shield Body	28-2726
Tube Shield Base.....	28-2725
Four Prong Socket.....	27-6034
Six Prong Socket.....	27-6036
Seven Prong Socket.....	27-6037
Knob (Station Selector).....	27-4206
Knob (Fine Tuning).....	27-4207
Knob (Volume, Waveband and Tone Control)..	27-4208
Bezel	28-2928
Bezel Glass	27-7887

MODEL 611 (A.C. - D.C.)



All Switch Sections Shown
in Position No. 3

Numbers Indicate Relative Positions
of Switch Sections
as Seen from Front of Chassis

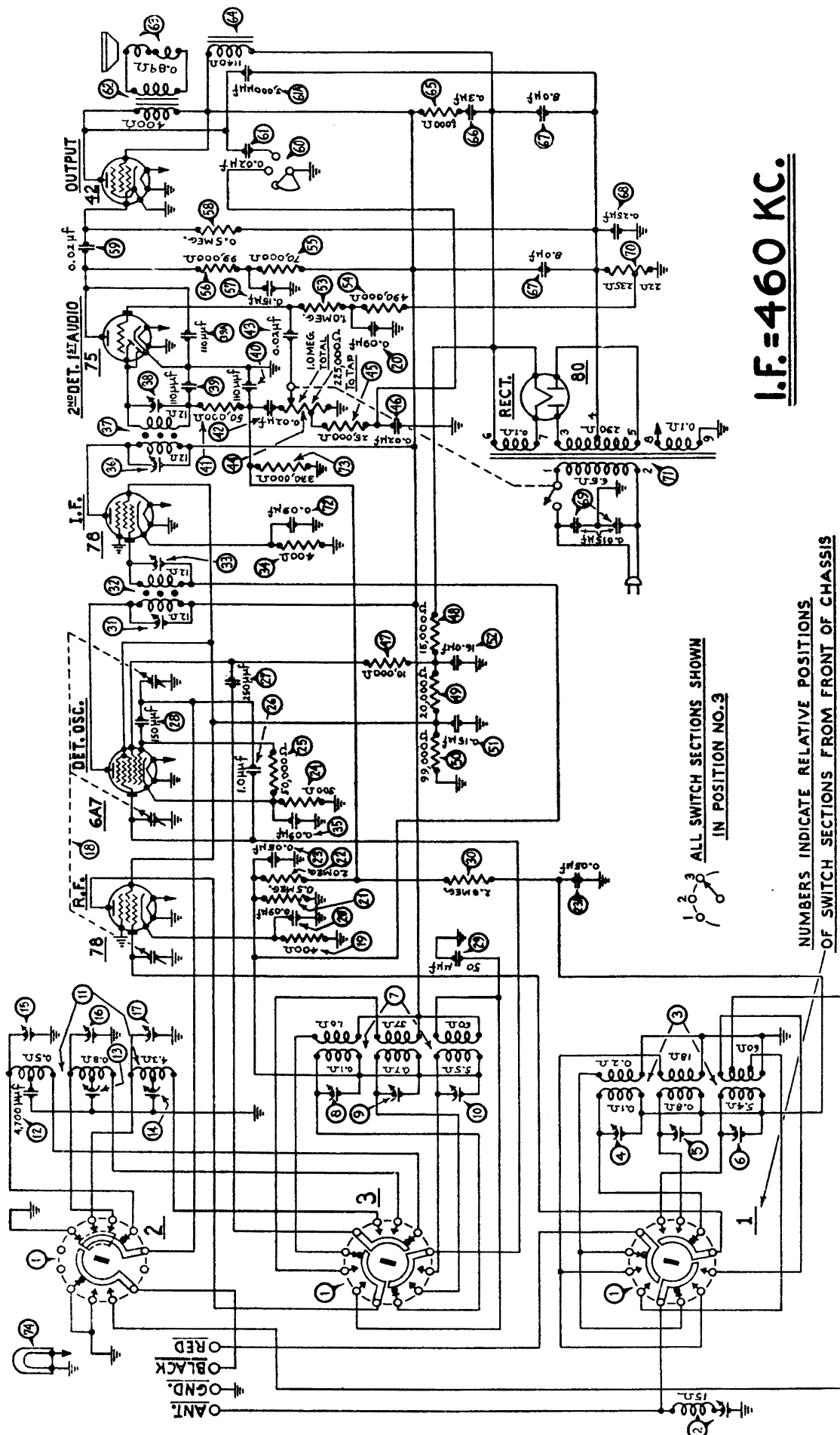


REPLACEMENT PARTS—MODEL 611

Nos. in Figs. 3 & 4	Description	Part No.
①	Wave Trap.....	32-6850
②	Condenser (.0014 Mfd. Mica).....	7007
③	Waveband Switch.....	42-1112
④	Condenser—Capacity Obtained by Twisted Wires.....	
⑤	Resistor (5000 ohms) (Green, Black, Red).....	33-1001
⑥	Antenna Transformer.....	32-1781
⑦	Compensating Condenser (Antenna, Standard).....	Part of 31-6047
⑧	Compensating Condenser (Antenna S.W.).....	Part of 31-6047
⑨	Condenser (.00025 Mfd. Mica).....	5858
⑩	Resistor (20 ohms) (Red, Black, Black).....	33-1206
⑪	Oscillator Transformer.....	32-1831
⑫	Compensating Condenser (Osc. I.F. Standard).....	Part of 31-6027
⑬	Compensating Condenser (Osc. H.F. Standard).....	Part of 31-6047
⑭	Compensating Condenser (Osc. S.W. H.F. End).....	Part of 31-6047
⑮	Compensating Condenser (Osc. S.W. L.F. End).....	Part of 31-6027
⑯	Condenser (.00225 Mfd. Mica).....	30-1055
⑰	Tuning Condenser Assembly.....	31-1528
⑱	Resistor (120000 ohms) (Brown, Red, Yellow).....	33-1128
⑲	Resistor (120000 ohms) (Brown, Red, Yellow).....	33-1128
⑳	Resistor (200 ohms Flexible) (Red, Black, Black).....	7217
㉑	Condenser (.1 Mfd. Twin Bakelite Block).....	4989-DG
㉒	Condenser (.05 Mfd. Tubular).....	30-4020
㉓	Compensating Condenser (1st I.F. Primary).....	Part of ㉔
㉔	1st I.F. Transformer.....	32-1671
㉕	Compensating Condenser (1st I.F. Secondary).....	Part of ㉖
㉖	Resistor (300 ohms Flexible) (Orange, Black, Black).....	33-3010
㉗	Condenser (.1 Mfd. & .01 Mfd. Bakelite Block).....	4989-FU
㉘	Pilot Lamp.....	34-2068
㉙	Compensating Condenser (2d I.F. Primary).....	Part of ㉚
㉚	2d I.F. Transformer.....	32-1672
㉛	Compensating Condenser (2d I.F. Secondary).....	Part of ㉜
㉜	Resistor (1000 ohms) (Brown, Black, Red).....	5837
㉝	Resistor (2 Megs.) (Red, Black, Green).....	33-1025
㉞	Resistor (50000 ohms) (Green, Brown, Orange).....	6098
㉟	Condenser (.00011 Mfd. Twin Bakelite Block).....	8028-DU
㊱	Condenser (.00011 Mfd. Mica).....	30-1031
㊲	Condenser (.15 Mfd. Twin Bakelite Block).....	6287-DU
㊳	Condenser (.01 Mfd. Bakelite Block).....	3908-SU
㊴	Volume Control & On-Off Switch.....	33-5114

Nos. in Figs. 3 & 4	Description	Part No.
㊵	Resistor (50000 ohms) (Green, Brown, Orange).....	4237
㊶	Resistor (13000 ohms) (Brown, Orange, Orange).....	3766
㊷	Resistor (15000 ohms) (Brown, Green, Orange).....	5278
㊸	Resistor (70000 ohms) (Violet, Black, Orange).....	33-1115
㊹	Resistor (240000 ohms) (Red, Yellow, Yellow).....	33-1097
㊺	Condenser (.015 Mfd. Bakelite Block).....	3793-SU
㊻	Resistor (.5 Meg.) (Yellow, White, Yellow).....	6097
㊼	Tone Control.....	30-4345
㊽	Resistor (400 ohms Flexible) (Yellow, Black, Black).....	33-3016
㊾	Condenser (Electrolytic—10 Mfd., 10 Mfd.).....	30-2125
㊿	Condenser (.02 Mfd. Tubular).....	30-4215
1	Output Transformer.....	32-7395
2	Cone & Voice Coil Assembly (S-15 Speaker).....	36-3157
3	Field Coil & Pot Assembly (S-15 Speaker).....	36-3519
4	Resistor (20 ohms Flexible) (Red, Black, Black).....	33-1206
5	Condenser (.25 Mfd. Tubular).....	30-4146
6	Resistor (1 Meg.) (Brown, Black, Green).....	33-1096
7	Resistor (.5 Meg.) (Yellow, White, Yellow).....	6097
8	Condenser (Electrolytic, 16 Mfd.).....	30-2124
9	Condenser (Electrolytic, 16 Mfd.).....	30-2124
10	Filter Choke.....	32-7018
11	Filter Choke.....	32-7452
12	Resistor (15 ohms, 130 ohms—Wirewound).....	33-3213
13	Condenser (.05 Mfd. Bakelite Block).....	3615-SU
14	Dial Scale.....	27-5097
15	Dial Hub and Set Screw Assembly.....	31-1550
16	Dial Spring Clamp.....	28-2837
17	Knob (Tone, Volume).....	27-4208
18	Knob (Waveband).....	27-4219
19	Knob (Station Selector).....	27-4208
20	Knob (Fine Tuning).....	27-4207
21	Socket (6 Prong).....	27-6036
22	Socket (7 Prong).....	27-6037
23	Bezel.....	28-2928
24	Bezel Glass.....	27-2857
25	Chassis Mtg. Screw.....	W-1456A
26	Chassis Mtg. Washer.....	27-4198
27	Tube Shield Body.....	28-2205
28	Tube Shield Base.....	28-2205

MODEL 620

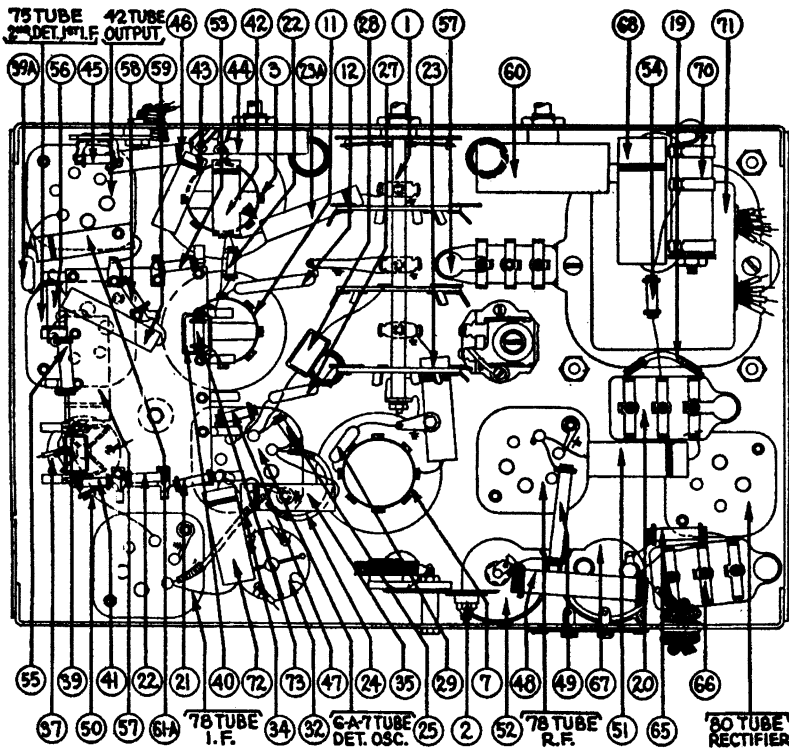


I.F. = 460 KC.

ALL SWITCH SECTIONS SHOWN
IN POSITION NO. 3

NUMBERS INDICATE RELATIVE POSITIONS
OF SWITCH SECTIONS FROM FRONT OF CHASSIS

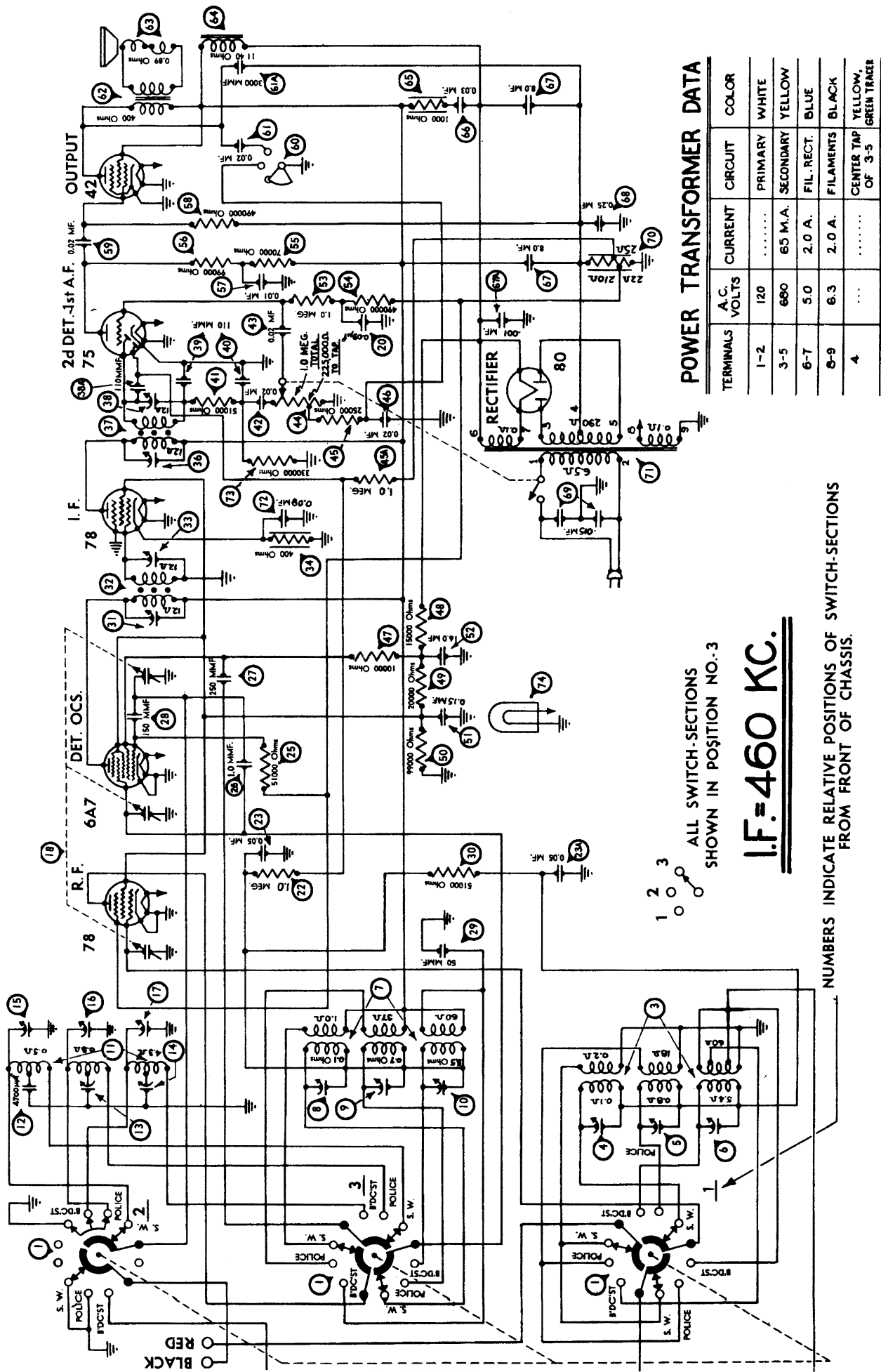
Replacement Parts—Model 620



Description	Part No.
1 Waveband Switch.....	42-1107
2 Wavetrap.....	38-6850
3 Antenna Transformer.....	32-1699
4 Compensating Condenser (Ant. S.W.).....	Part of 3
5 Compensating Condenser (Ant. Police).....	Part of 3
6 Compensating Condenser (Ant. Standard).....	Part of 3
7 R. F. Transformer.....	32-1636
8 Compensating Condenser (R.F. Short-Wave).....	Part of 7
9 Compensating Condenser (R.F. Police).....	Part of 7
10 Compensating Condenser (R.F. Standard).....	Part of 7
11 Oscillator Transformer.....	32-1637
12 Condenser (.0047 Mfd. Mica).....	30-1052
13 Compensating Condenser (Osc. Police).....	Part of 11
14 Compensating Condenser (Osc. H.F. Standard).....	Part of 11
15 Compensating Condenser (Osc. S.W.).....	Part of 11
16 Compensating Condenser (Osc. L.F. Police).....	Part of 31-6027
17 Compensating Condenser (Osc. L.F. Standard).....	Part of 31-6027
18 Tuning Condenser Assembly.....	31-1526
19 Resistor (400 ohms Flexible) (Yellow, Black, Brown).....	33-3016
20 Condenser (.09 Mfd. Twin Bakelite Block).....	4989-DG
21 Resistor (.5 Meg.) (Yellow, White, Yellow).....	6097
22 Resistor (2 Mega.) (Red, Black, Green).....	33-1025
23 Condenser (.05 Mfd. Tubular).....	30-4020
24A Condenser (.05 Mfd. Tubular).....	30-4020
24 Resistor (300 ohms Flexible) (Orange, Black, Brown).....	33-3010
25 Resistor (50000 ohms) (Green, Brown, Orange).....	6098
26 Condenser (1 Mmfd.).....	Part of 10
27 Condenser (.00025 Mfd. Mica).....	30-1032
28 Condenser (.00015 Mfd. Mica).....	30-1033
29 Condenser (.00005 Mfd. Mica).....	30-1029
30 Resistor (2 Mega.) (Red, Black, Green).....	33-1025

Description	Part No.
31 Compensating Condenser (1st I.F. Primary).....	Part of 32
32 1st I.F. Transformer.....	32-1646
33 Compensating Condenser (1st I.F. Secondary).....	Part of 32
34 Resistor (400 ohms Flexible) (Yellow, Black, Brown).....	33-3016
35 Condenser (.1 Mfd. Tubular).....	30-4122
36 Compensating Condenser (2nd I.F. Pri.).....	Part of 37
37 2nd I.F. Transformer.....	32-1647
38 Compensating Condenser (2nd I.F. Sec.).....	Part of 37
39 Condenser (.00011 Mfd. Mica).....	30-1031
39A Condenser (.00011 Mfd. Mica).....	30-1031
40 Condenser (.00011 Mfd. Mica).....	30-1031
41 Resistor (50000 ohms) (Green, Brown, Orange).....	6098
42 Condenser (.02 Mfd. Tubular).....	30-4215
43 Condenser (.02 Mfd. Tubular).....	30-4215
44 Volume Control and On-Off Switch.....	33-5105
45 Resistor (25000 ohms) (Red, Green, Orange).....	33-1013
46 Condenser (.02 Mfd. Tubular).....	30-4215
47 Resistor (10000 ohms) (Brown, Black, Orange).....	4412
48 Resistor (15000 ohms) (Brown, Green, Orange).....	5718
49 Resistor (20000 ohms) (Red, Black, Orange).....	6649
50 Resistor (99000 ohms) (White, White, Yellow).....	4411
51 Condenser (.15 Mfd. Tubular).....	30-4191
52 Condenser (16 Mfd. Electrolytic).....	30-2118
53 Resistor (1 Meg.) (Brown, Black, Green).....	33-1096
54 Resistor (.5 meg.) (Yellow, White, Yellow).....	6097
55 Resistor (70000 ohms) (Violet, Black, Orange).....	5385
56 Resistor (99000 ohms) (White, White, Yellow).....	6099
57 Condenser (.1 Mfd. Tubular).....	30-4122
58 Resistor (.5 meg.) (Yellow, White, Yellow).....	6097
59 Condenser (.02 Mfd. Tubular).....	30-4113
60 Tone Control.....	30-4316
61 Condenser in Tone Control.....	Part of 60
61A Condenser (.003 Mfd. Tubular).....	30-4042
62 Output Transformer.....	32-7019
63 Voice Coil & Cone Assembly (S-14 Speaker).....	36-3157
64 Field Coil & Pot Assembly (S-14 Speaker).....	36-3495
65 Resistor (1000 ohms) (Brown, Black, Red).....	5837
66 Condenser (.3 Mfd. Bakelite Block).....	6287-DU
67 Condenser (8 Mfd. & 8 Mfd. Electrolytic).....	30-2079
68 Condenser (.25 Mfd. Tubular).....	30-4146
69 Condenser (.015 Mfd. Bakelite Block).....	3793-DG
70 Resistor (BC Wirewound, 22 ohms, 235 ohms).....	33-3037
71 Power Transformer (115 Volts 60 Cycles).....	32-7381
(115 Volts 25 Cycles).....	32-7382
(230 Volts 50 Cycles).....	33-7383
72 Condenser (.1 Mfd. Tubular).....	30-4122
73 Resistor (330,000 ohms) (Orange, Orange, Yellow).....	33-1200
74 Pilot Lamp.....	34-2064
Dial Scale.....	27-5098
Dial Hub and Set Screw.....	31-1550
Dial Front Spring.....	28-2837
Knob (Station Selector).....	27-4206
Knob (Fine Tuning).....	27-4207
Knob (Waveband).....	27-4219
Knob (Tone, Volume).....	27-4208
Tube Shield.....	28-2726
Tube Shield Base.....	28-2725
Tube Socket (4 Prong).....	27-6034
Tube Socket (6 Prong).....	27-6036
Tube Socket (7 Prong).....	27-6037
Speaker Plug Socket.....	27-6033
Chassis Mtg. Screw.....	W-1495
Chassis Mtg. Washer (Rubber).....	27-4198
Electric Cord and Plug.....	L-943-A
Bezel.....	28-2928
Bezel Glass.....	27-7887

MODEL 620
(Later Production)



ALL SWITCH-SECTIONS
SHOWN IN POSITION NO.-3

I.F.=460 KC.

NUMBERS INDICATE RELATIVE POSITIONS OF SWITCH-SECTIONS
FROM FRONT OF CHASSIS.

POWER TRANSFORMER DATA

TERMINALS	A.C. VOLTS	CURRENT	CIRCUIT	COLOR
1-2	120	.....	PRIMARY	WHITE
3-5	680	65 M.A.	SECONDARY	YELLOW
6-7	5.0	2.0 A.	FIL. RECT.	BLUE
8-9	6.3	2.0 A.	FILAMENTS	BLACK
4	...	.....	CENTER TAP OF 3-5	YELLOW, GREEN TRACER

MODEL 620

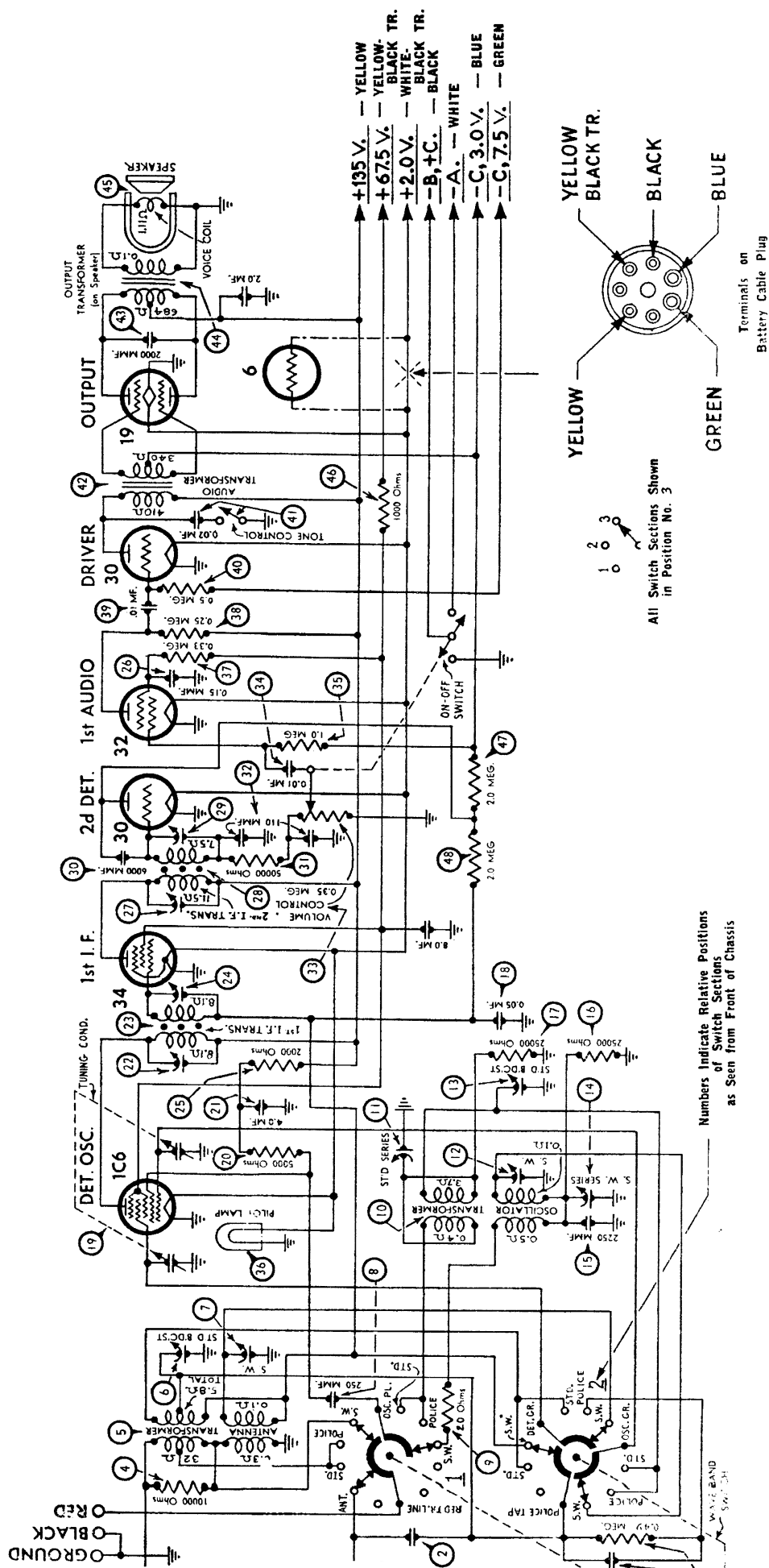
Later 1935 Production Runs

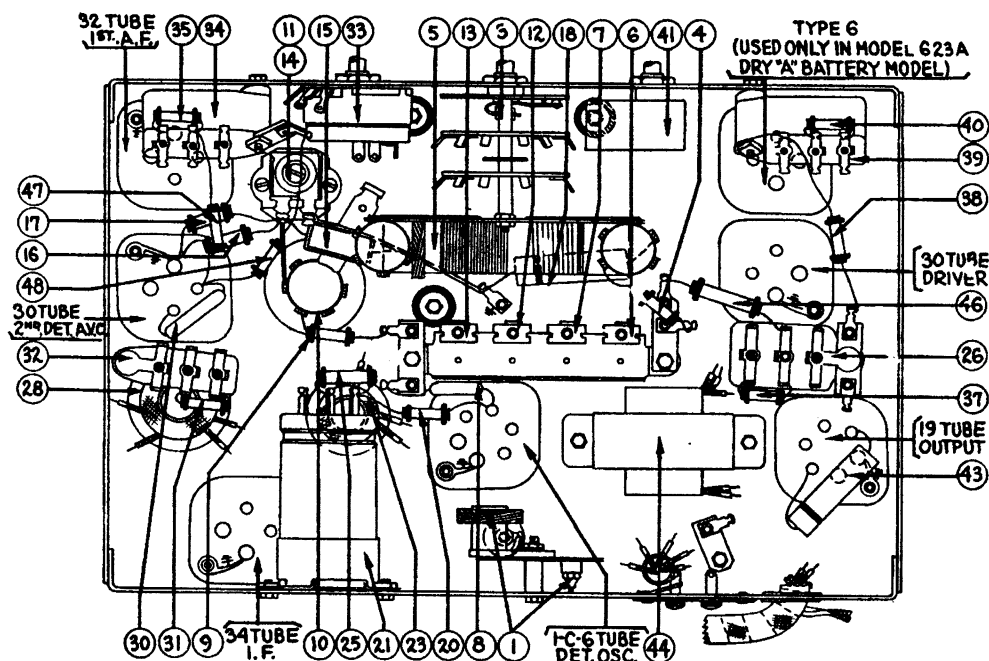
Beginning with run No. 7 the grid bias arrangement for the 78 R.F. and 6A7 1st detector was changed. A fixed bias from the B.C. resistor is fed through the AVC circuit to the grids of these tubes. The oscillator circuit was changed to series feed to eliminate possibilities of failure at 6.0 mc.

PARTS LIST

	Description	Part No.	Description	Part No.
①	Waveband Switch	42-1152	⊗ Resistor (99000 ohms) (White, White, Yellow)	6099
②	Wavetrap	38-6850	Ⓜ Condenser (.15 Mfd. Tubular)	30-4191
③	Antenna Transformer	32-1867	Ⓜ Condenser (16 Mfd. Electrolytic)	30-2118
④	Compensating Condenser (Ant. S.W.)	Part of ③	Ⓜ Resistor (1 Meg.) (Brown, Black, Green)	33-1096
⑤	Compensating Condenser (Ant. Police)	Part of ③	Ⓜ Resistor (.5 Meg.) (Yellow, White, Yellow)	6097
⑥	Compensating Condenser (Ant. Standard)	Part of ③	Ⓜ Resistor (70000 ohms) (Violet, Black, Orange)	33-1115
⑦	R. F. Transformer	32-1868	Ⓜ Resistor (99000 ohms) (White, White, Yellow)	6099
⑧	Compensating Condenser (R.F. Short-Wave)	Part of ⑦	Ⓜ Condenser (.09 Mf.)	4989-SG
⑨	Compensating Condenser (R.F. Police)	Part of ⑦	Ⓜ Resistor (.5 meg.) (Yellow, White, Yellow)	6097
⑩	Compensating Condenser (R.F. Standard)	Part of ⑦	Ⓜ Condenser (.03 Mfd. Bakelite)	8318-SU
⑪	Oscillator Transformer	32-1869	Ⓜ Tone Control	30-4316
⑫	Condenser (.0047 Mfd. Mica)	30-1052	Ⓜ Condenser in Tone Control	Part of ⑩
⑬	Compensating Condenser (Osc. Police)	Part of ⑪	Ⓜa Condenser (.003 Mfd. Tubular)	30-4042
⑭	Compensating Condenser (Osc. H.F. Standard)	Part of ⑪	Ⓜ Output Transformer	32-7019
⑮	Compensating Condenser (Osc. S.W.)	Part of ⑪	Ⓜ Voice Coil & Cone Assembly (S-14 Speaker)	36-3157
⑯	Compensating Condenser (Osc. L.F. Police)	Part of ⑪	Ⓜ Field Coil & Pot Assembly (S-14 Speaker)	36-3495
⑰	Compensating Condenser (Osc. L.F. Standard)	Part of ⑪	Ⓜ Resistor (1000 ohms) (Brown, Black, Red)	33-1028
⑱	Tuning Condenser Assembly	31-1741	Ⓜ Condenser (.3 Mfd. Bakelite Block)	6287-DU
Ⓜ	Condenser (.09 Mfd. Twin Bakelite Block)	4989-DG	Ⓜ Condenser (8 Mfd. & 8 Mfd. Electrolytic)	30-2079
Ⓜ	Resistor (1. Meg.) (Red, Black, Green)	33-1096	Ⓜa Condenser (.001 Mf.)	30-4310
Ⓜ	Condenser (.05 Mfd. Tubular)	30-4020	Ⓜ Condenser (.25 Mfd. Tubular)	30-4146
Ⓜa	Condenser (.05 Mfd. Tubular)	30-4020	Ⓜ Condenser (.015 Mfd. Bakelite Block)	3793-DG
Ⓜ	Resistor (50000 ohms) (Green, Brown, Orange)	6098	Ⓜ Resistor (BC Wirewound, 22 ohms, 25 ohms, 210 ohms)	33-3222
Ⓜ	Condenser (1 Mmfd.)	Part of ⑱	Ⓜ Power Transformer (115 Volts 60 Cycles)	32-7381
Ⓜ	Condenser (.00025 Mfd. Mica)	30-1032	(115 Volts 25 Cycles)	32-7382
Ⓜ	Condenser (.00015 Mfd. Mica)	30-1033	(230 Volts 50 Cycles)	33-7383
Ⓜ	Condenser (.00005 Mfd. Mica)	30-1029	Ⓜ Condenser (.1 Mfd. Tubular)	Part of Ⓜ
Ⓜ	Resistor (51,000 ohms) (Green, Brown, Orange)	6098	Ⓜ Resistor (330,000 ohms) (Orange, Orange, Yellow)	33-1200
Ⓜ	Compensating Condenser (1st I.F. Primary)	Part of Ⓜ	Ⓜ Pilot Lamp	34-2064
Ⓜ	1st I.F. Transformer	32-1646	Dial Scale	27-5098
Ⓜ	Compensating Condenser (1st I.F. Secondary)	Part of Ⓜ	Dial Hub and Set Screw	31-1550
Ⓜ	Resistor (400 ohms Flexible) (Yellow, Black, Brown)	33-3016	Dial Front Spring	28-2837
Ⓜ	Compensating Condenser (2nd I.F. Pri.)	Part of Ⓜ	Knob (Station Selector)	27-4206
Ⓜ	2nd I.F. Transformer	32-1647	Knob (Fine Tuning)	27-4207
Ⓜ	Compensating Condenser (2nd I.F. Sec.)	Part of Ⓜ	Knob (Waveband)	27-4219
Ⓜa	Condenser (.00011 Mfd. Mica)	30-1031	Knob (Tone, Volume)	27-4208
Ⓜ	Condenser (.00011 Mfd. (Twin Bakelite)	8035-DG	Tube Shield	28-2726
Ⓜ	Condenser (.00011 Mfd. Mica)	Part of Ⓜ	Tube Shield Base	28-2725
Ⓜ	Resistor (50000 ohms) (Green, Brown, Orange)	6098	Tube Socket (4 Prong)	27-6034
Ⓜ	Condenser (.02 Mfd. Tubular)	30-4215	Tube Socket (6 Prong)	27-6036
Ⓜ	Condenser (.02 Mfd. Tubular)	30-4215	Tube Socket (7 Prong)	27-6037
Ⓜ	Volume Control and On-Off Switch	33-5105	Speaker Plug Socket	27-6033
Ⓜ	Resistor (25000 ohms) (Red, Green, Orange)	33-1013	Chassis Mtg. Screw	W-1495
Ⓜa	Resistor (1. Meg.) (Brown, Black, Green)	33-1096	Chassis Mtg. Washer (Rubber)	27-4198
Ⓜ	Condenser (.02 Mfd. Tubular)	30-4215	Electric Cord and Plug	L-943-A
Ⓜ	Resistor (10000 ohms) (Brown, Black, Orange)	4412	Bezel	28-2928
Ⓜ	Resistor (15000 ohms) (Brown, Green, Orange)	5718	Bezel Glass	27-7887
Ⓜ	Resistor (20000 ohms) (Red, Black, Orange)	6649		

MODEL 623
(Battery Operated)





Replacement Parts—Model 623

Nos. in
Figs. 3 & 4

	Description	Part No.
①	Wave Trap.....	38-6850
②	Condenser (Capacity obtained by Twisted Wires).....	
③	Waveband Switch.....	42-1112
④	Resistor (10000 ohms) (Brown, Black, Orange).....	33-1000
⑤	Antenna Transformer.....	32-1660
⑥	Compensating Condenser (Ant. Standard).....	Part of 31-6047
⑦	Compensating Condenser (Ant. S.W.).....	Part of 31-6047
⑧	Condenser (.00025 Mfd. Mica).....	30-1032
⑨	Resistor (20 ohms) (Red, Black, Black).....	33-1206
⑩	Oscillator Transformer.....	32-1831
⑪	Compensating Condenser (Osc. L.F. Standard).....	Part of 31-6027
⑫	Compensating Condenser (Osc. S.W., H.F. End).....	Part of 31-6047
⑬	Compensating Condenser (Osc. H.F. Standard).....	Part of 31-6047
⑭	Compensating Condenser (Osc. S.W. Series).....	Part of 31-6027
⑮	Condenser (.00225 Mfd. Mica).....	30-1055
⑯	Resistor (25000 ohms) (Red, Green, Orange).....	33-1013
⑰	Resistor (25000 ohms) (Red, Green, Orange).....	33-1013
⑱	Condenser (.05 Mfd. Tubular).....	30-4020
⑲	Tuning Condenser Assembly.....	31-1526
⑳	Resistor (5000 ohms) (Green, Black, Red).....	6096
㉑	Condenser (Electrolytic) (4 Mfd., 8 Mfd., 2 Mfd.).....	30-2127
㉒	Compensating Condenser (1st I.F. Primary).....	Part of ㉓
㉓	1st I.F. Transformer.....	32-1793
㉔	Compensating Condenser (1st I.F. Secondary).....	Part of ㉓
㉕	Resistor (2000 ohms) (Red, Black, Red).....	33-1028
㉖	Condenser (.15 Mfd. Bakelite Block).....	6287-SG
㉗	Compensating Condenser (2nd I.F. Primary).....	Part of ㉓
㉘	2nd I.F. Transformer.....	32-1872
㉙	Compensating Condenser (2nd I.F. Secondary).....	Part of ㉓
㉚	Condenser (.006 Mfd. Mica).....	6359
㉛	Resistor (50000 ohms) (Green, Brown, Orange).....	6098
㉜	Condenser (.00011 Mfd. Twin Bakelite Block).....	8035-DG
㉝	Volume Control and On-Off Switch.....	33-5115
㉞	Condenser (.01 Mfd. Bakelite Block).....	3903-SU
㉟	Resistor (1 Meg.) (Brown, Black, Orange).....	33-1096
㊱	Pilot Lamp.....	34-2065

*Not shown in cut.

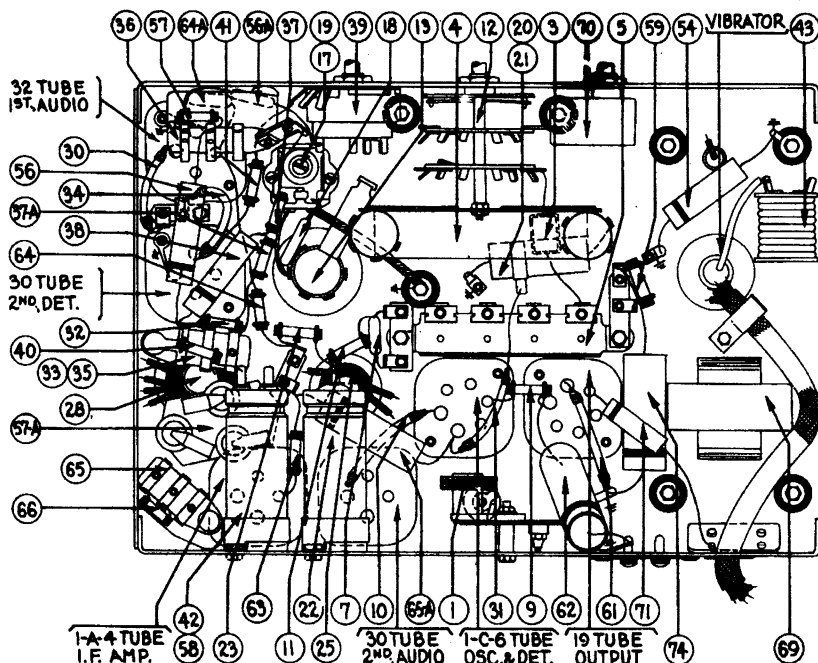
Nos. in
Figs. 3 & 4

	Description	Part No.
①	Resistor (330000 ohms) (Orange, Orange, Yellow).....	33-1200
②	Resistor (250000 ohms) (Red, Yellow, Yellow).....	33-1097
③	Condenser (.01 Mfd. Bakelite Block).....	3903-SU
④	Resistor (.5 Meg.) (Yellow, White, Yellow).....	6097
⑤	Tone Control.....	30-4344
⑥	Audio Transformer (On Top of Chassis).....	32-7454
⑦	Condenser (.002 Mfd. Tubular).....	30-4177
⑧	Output Transformer (On Chassis).....	32-7480
⑨	Cone & Voice Coil Assembly (KR-8 Speaker).....	36-3159
⑩	Resistor (1000 ohms) (Brown, Black, Red).....	5837
⑪	Resistor (2 Meg.) (Red, Black, Green).....	33-1025
⑫	Resistor (2 Meg.) (Red, Black, Green).....	33-1025
*⑬	Condenser (.00015 Mfd. Mica).....	30-1033
*⑭	Resistor (.5 Meg.) (Yellow, White, Yellow).....	6097
	Dial Scale.....	27-5097
	Dial Hub Assembly.....	31-1550
	Dial Spring Clamp.....	28-2837
‡	Basel (623-B).....	‡28-3163
‡‡	Basel Glass (623-B).....	‡‡27-8006
	Tube Socket (4-Prong).....	27-6044
	Tube Socket (6-Prong).....	27-6036
	Tube Shield (Round).....	8006
	Tube Shield Base (Round).....	8004
	Tube Shield (Square).....	28-2726
	Tube Shield Base (Square).....	28-2726
	Knob (Waveband).....	27-4219
	Knob (Tone, Volume).....	27-4208
	Knob (Station Selector).....	27-4206
	Knob (Slow Speed).....	27-4207
	Chassis Mtg. Screw.....	W-1496A
	Chassis Mtg. Washer (Rubber).....	27-4198
	Chassis Mtg. Bumper (Rubber).....	27-4197
	Battery Cable.....	41-3143
	Ballast Tube Socket Jumper Wire.....	28-8061
	‡623-F Basel.....	28-3164
	‡‡623-F Basel Glass.....	27-8007

(6-Volt Battery Operated)



NUMBERS INDICATE RELATIVE POSITIONS OF SWITCH-SECTIONS FROM FRONT OF CHASSIS.

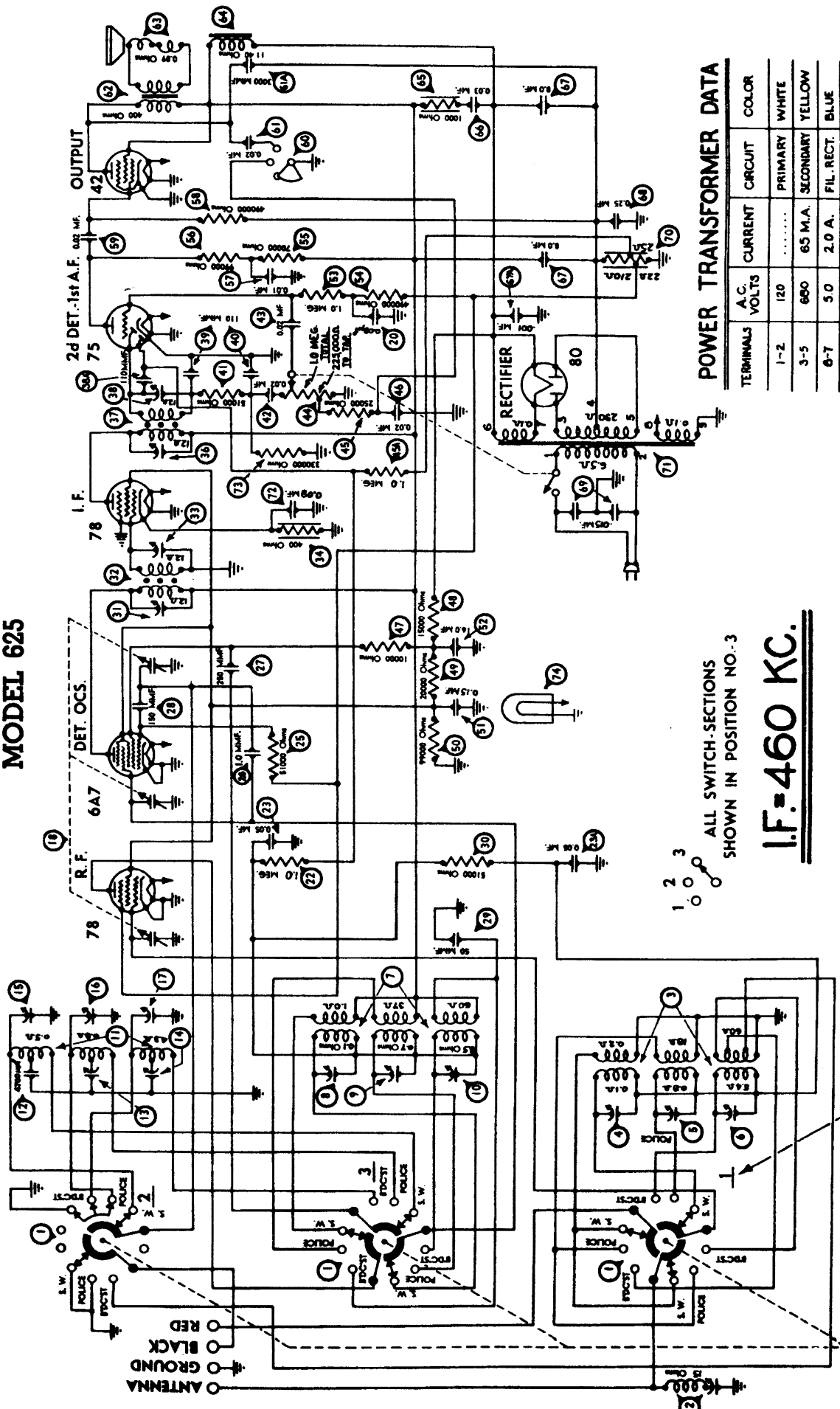


Replacement Parts—Model 624

Schematic Number	Part and Description	Part No.
①	Wave Trap	38-6850
②	Condenser (Leads twisted together)	
③	Condenser (.0006 Mf. mica)	30-1049
④	Aerial Transformer	32-1669
⑤	Compensator (Antenna Standard & Police)	31-6047
⑥	Compensator (Antenna Short Wave)	Part of ⑤
⑦	Condenser (.00025 Mf. mica)	30-1032
⑧	Tuning Condenser	31-1740
⑨	Resistor (32,000 ohms)	33-1208
⑩	Resistor (14.3 ohms wire wound)	33-3232
⑪	Resistor (5,000 ohms)	6096
⑫	Wave Band Switch	42-1151
⑬	Oscillator Transformer	32-1973
⑭	Compensator (Oscillator Standard & Police)	Part of ⑤
⑮	Resistor (40,000 ohms, ¼ watt)	33-1180
⑯	Compensator (Oscillator Short Wave)	Part of ⑤
⑰	Compensator (Nur) (Osc. Short Wave Series)	31-6027
⑱	Condenser (2250 Mmf. mica)	30-1055
⑲	Compensator (Screw) (Osc. Standard Series)	Part of ⑤
⑳	Condenser (.05 Mf. twin tubular)	30-4394
㉑	Condenser (.05 Mf.)	Part of ㉑
㉒	Electrolytic Condenser (4 Mf., 200 V.)	30-2144
㉓	Resistor (2000 ohms, ¼ watt)	33-1029
㉔	Compensator (Primary 1st I.F.)	Part of ㉔
㉕	1st I.F. Transformer	32-1671
㉖	Compensator (Secondary 1st I.F.)	Part of ㉕
㉗	Compensator (Primary 2nd I.F.)	Part of ㉕
㉘	2nd I.F. Transformer	32-1672
㉙	Compensator (Secondary 2nd I.F.)	Part of ㉕
㉚	Resistor (33 ohms wire wound)	33-3233
㉛	Resistor (100 ohms, wire wound)	33-3187
㉜	Resistor (51,000 ohms, ¼ watt)	6098
㉝	Condenser (.00011 Mf. twin bakelite)	8035-DG
㉞	Resistor (33 ohms wire wound)	33-3233
㉟	Condenser (.00011 Mf.)	Part of ㉟
㊱	Condenser (.01 Mf. bakelite)	3903-SU
㊲	Resistor (1 Meg., ¼ watt)	33-1096
㊳	Resistor (1 Meg., ¼ watt)	33-1096
㊴	Condenser (.01 Mf. tubular)	30-4124
㊵	Volume Control (.5 Meg.)	33-5137
㊶	Resistor (1000 ohms, ¼ watt)	33-1028
㊷	Resistor (1000 ohms, ¼ watt)	33-1028
㊸	Electrolytic Condenser (10 Mf., 8.0 Mf.)	30-2143
㊹	R.F. Choke	32-1954
㊺	Vibrator Unit	41-2015
㊻	Condenser (.5 Mf. metal case)	30-4058
㊼	R.F. Choke	32-1954
㊽	Condenser (1.0 Mf. metal case)	30-4399
㊾	Power Transformer	32-7504
㊿	Condenser (.01 Mf. tubular)	30-4318
1	Electrolytic Condenser (8.0 Mf. twin)	30-2138
2	Filter Choke	32-7543
3	Electrolytic Condenser (8.0 Mf.)	Part of 3
4	R.F. Choke	32-1842
5	Condenser (.05 Mf. tubular)	30-4020
6	Off-On Switch	Part of 6

Schematic Number	Part and Description	Part No.
7	Condenser (.05 Mf. tubular)	30-4020
8	Condenser (.00025 Mf. mica)	30-1032
9	Resistor (1.0 megohm, ¼ watt)	33-1096
10	Bias Cells Assembly	38-7275
11	Electrolytic Condenser (8.0 Mf.)	Part of 11
12	Resistor (20,000 ohms, ½ watt)	6650
13	Pilot Lamp	34-2065
14	Resistor (10 ohms wire wound)	33-3041
15	Condenser (.25 Mf. tubular)	30-4146
16	Resistor (330,000 ohms, ¼ watt)	33-1200
17	Resistor (240,000 ohms, ¼ watt)	33-1097
18	Condenser (.00011 Mf. mica)	30-1031
19	Condenser (.01 Mf. bakelite)	3903-SU
20	Condenser (.15 Mf. tubular)	30-4191
21	Resistor (490,000 ohms, ¼ watt)	6097
22	Condenser (.00011 Mf. mica)	30-1031
23	Condenser (.02 Mf.)	Part of 23
24	Input Transformer	32-7454
25	Tone Control Assembly	30-4391
26	Condenser (.002 Mf. tubular)	30-4177
27	Output Transformer	32-7503
28	Voice Coil and Cone Assembly	36-3540
29	Condenser (.25 Mf. tubular)	30-4146
30	Wiring Panel (2 lug)	38-5500
31	Wiring Panel (2 lug)	38-6801
32	Wiring Panel (1 lug)	38-7178
33	Wiring Panel (2 lug)	38-5501
34	Tube Shield Body	28-2726
35	Tube Shield Base	28-2725
36	Glowing Arrow Mask	27-5167
37	Screen	27-5166
38	Mask Arm	29-3274
39	Link	29-3285
40	Coupling	29-3586
41	Electrolytic Condenser Support	29-1328
42	Screen Bracket Assembly	31-1751
43	Dial Scale	27-5163
44	Hub Assembly	28-7129
45	Pilot Lamp Bracket Assembly	38-7499
46	R.F. Shield Assembly	38-6757
47	Battery Cable	41-3176
48	Speaker Plug Socket	27-6043
49	Speaker Terminal Cover	02824
50	Knob (tuning)	27-4206
51	Knob (slow-speed tuning)	27-4207
52	Knob (volume, tone, wave switch)	27-4208
53	Bezel	28-3163
54	Bezel Gasket	27-7980
55	Bezel Glass	27-8112
56	Bezel Glass Mask	28-3429
57	Bezel Mounting Screw	W-1494
58	Speaker Cable	36-3009
59	Front Bumper	27-4197
60	Chassis Mounting Screw	W-1496-A
61	Chassis Mounting Washer (rubber)	27-4198
62	Chassis Mounting Cushion (rubber)	27-4199
63	Chassis Mounting Sleeve	28-2897

MODEL 625



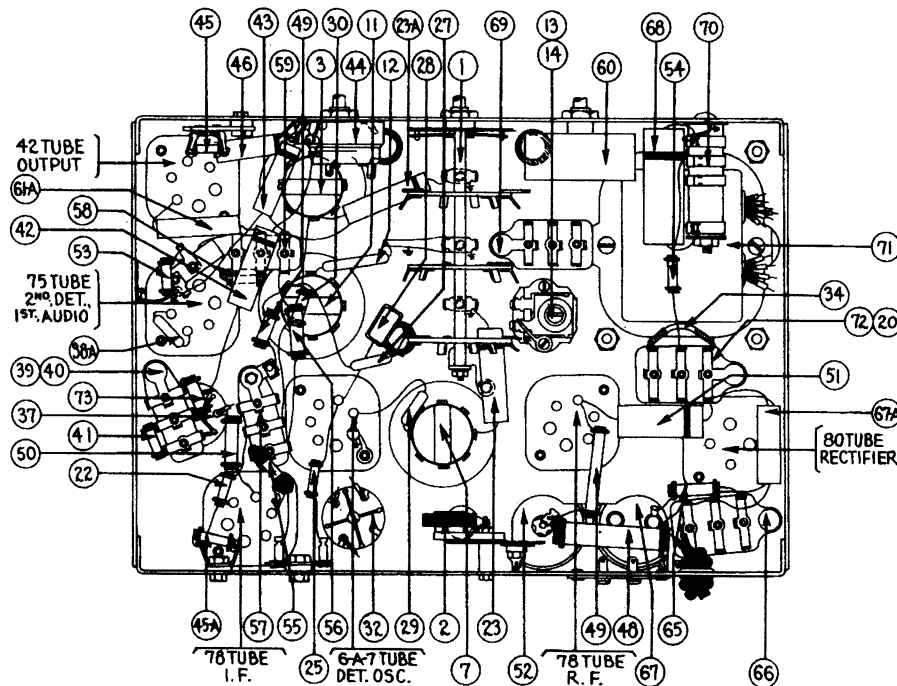
POWER TRANSFORMER DATA

TERMINALS	A.C. VOLTS	CURRENT	CIRCUIT	COLOR
1-2	120	.....	PRIMARY	WHITE
3-5	680	65 M.A.	SECONDARY	YELLOW
6-7	5.0	2.0 A.	FIL. RECT.	BLUE
8-9	6.3	2.0 A.	FILAMENTS	BLACK
4	...	.....	CENTER TAP OF 3-5	YELLOW, GREEN TRACER

ALL SWITCH-SECTIONS SHOWN IN POSITION NO. 3

IF = 460 KC.

NUMBERS INDICATE RELATIVE POSITIONS OF SWITCH-SECTIONS FROM FRONT OF CHASSIS.



Replacement Parts—Model 625

Description	Part No.	Description	Part No.
① Waveband Switch	42-1152	⑤⑥ Condenser (16 Mfd. Electrolytic)	30-2118
② Wavetrap	38-6850	⑤⑦ Resistor (1 Meg.) (Brown, Black, Green)	33-1096
③ Antenna Transformer	32-1867	⑤⑧ Resistor (490,000 ohms) (Yellow, White)	6097
④ Compensator (Ant. S.W.)	Part of ③	⑤⑨ Resistor (70000 ohms) (Violet, Black, Orange)	33-1115
⑤ Compensator (Ant. Police)	Part of ③	⑤⑩ Resistor (99000 ohms) (White, White, Yellow)	6099
⑥ Compensator (Ant. Standard)	Part of ③	⑤⑪ Condenser (.09 Mfd.) (Bakelite)	4989-SG
⑦ R. F. Transformer	32-1868	⑤⑫ Resistor (490,000 ohms) (Yellow, White, Yellow)	6097
⑧ Compensator (R.F. Short-Wave)	Part of ⑦	⑤⑬ Condenser (.03 Mfd. Bakelite)	8318-SU
⑨ Compensator (R.F. Police)	Part of ⑦	⑤⑭ Tone Control	30-4332
⑩ Compensator (R.F. Standard)	Part of ⑦	⑤⑮ Condenser in Tone Control (.02 Mfd.)	Part of ⑤⑭
⑪ Oscillator Transformer	32-1869	⑤⑯ Condenser (.003 Mfd. Tubular)	30-4042
⑫ Condenser (.0047 Mfd. Mica)	30-1052	⑤⑰ Output Transformer	32-7019
⑬ Compensator (Osc. Police Series) (Nut)	31-6027	⑤⑱ Voice Coil & Cone Assembly (S-14 Speaker)	36-3157
⑭ Compensator (Osc. Standard Series) (Screw)	Part of ⑬	⑤⑲ Field Coil & Pot Assembly (S-14 Speaker)	36-3495
⑮ Compensator (Osc. S.W.)	Part of ⑬	⑤⑳ Resistor (1000 ohms) (Brown, Black, Red)	33-1028
⑯ Compensator (Osc. Police)	Part of ⑬	⑤㉑ Condenser (.3 Mfd. Bakelite Block)	6287-DU
⑰ Compensator (Osc. Standard)	Part of ⑬	⑤㉒ Condenser (8 Mfd. & 8 Mfd. Electrolytic)	30-2079
⑱ Tuning Condenser Assembly	31-1741	⑤㉓ Condenser (.001 Mfd.)	30-4310
⑲ Condenser (.09 Mfd. Twin Bakelite Block)	4989-DG	⑤㉔ Condenser (.25 Mfd. Tubular)	30-4146
⑳ Resistor (1. Meg.) (Red, Black, Green)	33-1096	⑤㉕ Condenser (.015 Mfd. Twin Bakelite Block)	3793-DG
㉑ Condenser (.05 Mfd. Tubular)	30-4020	⑤㉖ Resistor (BC Wirewound, 22 ohms, 25 ohms, 210 ohms)	33-3222
㉒ Condenser (.05 Mfd. Tubular)	30-4020	⑤㉗ Power Transformer (115 Volts 60 Cycles)	32-7381
㉓ Resistor (5000 ohms) (Green, Brown, Orange)	6098	⑤㉘ (115 Volts 25 Cycles)	32-7382
㉔ Condenser (1 Mmf.) Wires Twisted	Part of ⑬	⑤㉙ (230 Volts 50 Cycles)	32-7418
㉕ Condenser (.00025 Mfd. Mica)	30-1032	⑤㉚ Condenser (.09 Mfd.)	Part of ⑤㉙
㉖ Condenser (.00015 Mfd. Mica)	30-1033	⑤㉛ Resistor (330,000 ohms) (Orange, Orange, Yellow)	33-1200
㉗ Condenser (.00005 Mfd. Mica)	30-1029	⑤㉜ Pilot Lamp	34-2064
㉘ Resistor (51,000 ohms) (Green, Brown, Orange)	6098	⑤㉝ Dial Scale	27-5098
㉙ Compensator (1st I.F. Primary)	Part of ㉚	⑤㉞ Dial Hub and Set Screw	31-1550
㉚ 1st I.F. Transformer	32-2019	⑤㉟ Dial Front Spring	28-2837
㉛ Compensator (1st I.F. Secondary)	Part of ㉚	⑤㊱ Knob (Station Selector)	27-4206
㉜ Resistor (400 ohms Flexible) (Yellow, Black, Brown)	33-3016	⑤㊲ Knob (Fine Tuning)	27-4207
㉝ Compensator (2nd I.F. Pri.)	Part of ㉚	⑤㊳ Knob (Waveband)	27-4219
㉞ 2nd I.F. Transformer	32-2020	⑤㊴ Knob (Tone, Volume)	27-4208
㉟ Compensator (2nd I.F. Sec.)	Part of ㉚	⑤㊵ Tube Shield	28-2726
㊱ Condenser (.00011 Mfd. Mica)	30-1031	⑤㊶ Tube Shield Base	28-2725
㊲ Condenser (.00011 Mfd. (Twin Bakelite)	8035-DG	⑤㊷ Tube Socket (4 Prong)	27-6034
㊳ Condenser (.00011 Mfd. Mica)	Part of ㊲	⑤㊸ Tube Socket (6 Prong)	27-6036
㊴ Resistor (5000 ohms) (Green, Brown, Orange)	6098	⑤㊹ Tube Socket (7 Prong)	27-6037
㊵ Condenser (.02 Mfd. Tubular)	30-4215	⑤㊺ Speaker Plug Socket	27-6033
㊶ Condenser (.02 Mfd. Tubular)	30-4215	⑤㊻ Chassis Mtg. Screw	W-1495
㊷ Volume Control and On-Off Switch	33-5105	⑤㊼ Chassis Mtg. Washer (Rubber)	27-4198
㊸ Resistor (25000 ohms) (Red, Green, Orange)	33-1013	⑤㊽ Electric Cord and Plug	L-943-A
㊹ Resistor (1. Meg.) (Brown, Black, Green)	33-1096	⑤㊾ Bezel	28-2928
㊺ Condenser (.02 Mfd. Tubular)	30-4215	⑤㊿ Bezel Glass	27-7887
㊻ Resistor (10000 ohms) (Brown, Black, Orange)	33-310334	⑤ Bezel Glass	27-5162
㊼ Resistor (15000 ohms) (Brown, Green, Orange)	5718	⑤ Glowing Arrow Mask	27-5161
㊽ Resistor (20000 ohms) (Red, Black, Orange)	6649	⑤ Glowing Arrow Screen	29-3274
㊾ Resistor (99000 ohms) (White, White, Yellow)	6099	⑤ Mask Arm	29-3285
㊿ Condenser (.15 Mfd. Tubular)	30-4191	⑤ Link	29-3586
		⑤ Coupling	

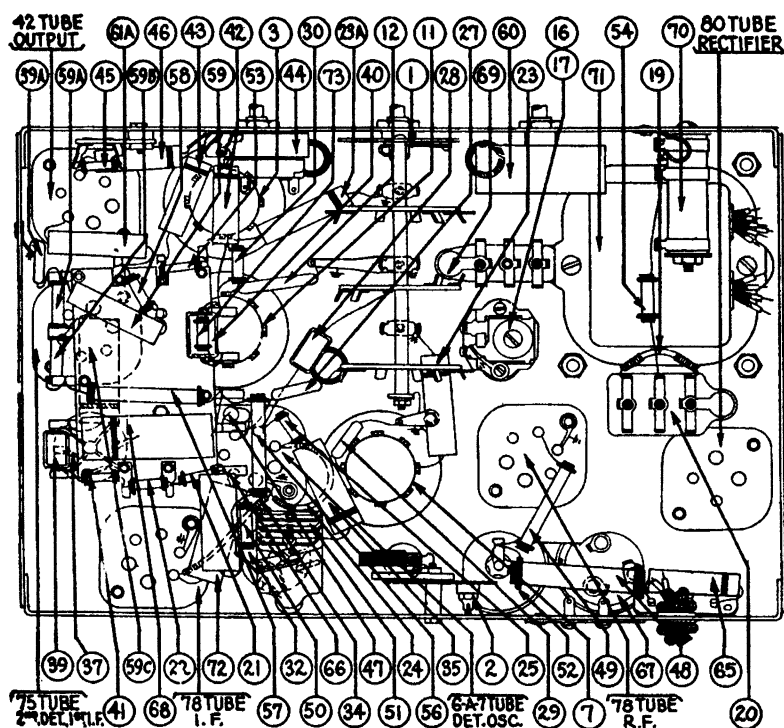
I.F. = 460 KC.

ALL SWITCH SECTIONS SHOWN IN POSITION NO. 3

NUMBERS INDICATE RELATIVE POSITIONS OF SWITCH SECTIONS FROM FRONT OF CHASSIS

I.F.=460 KC.

Replacement Parts—Model 630



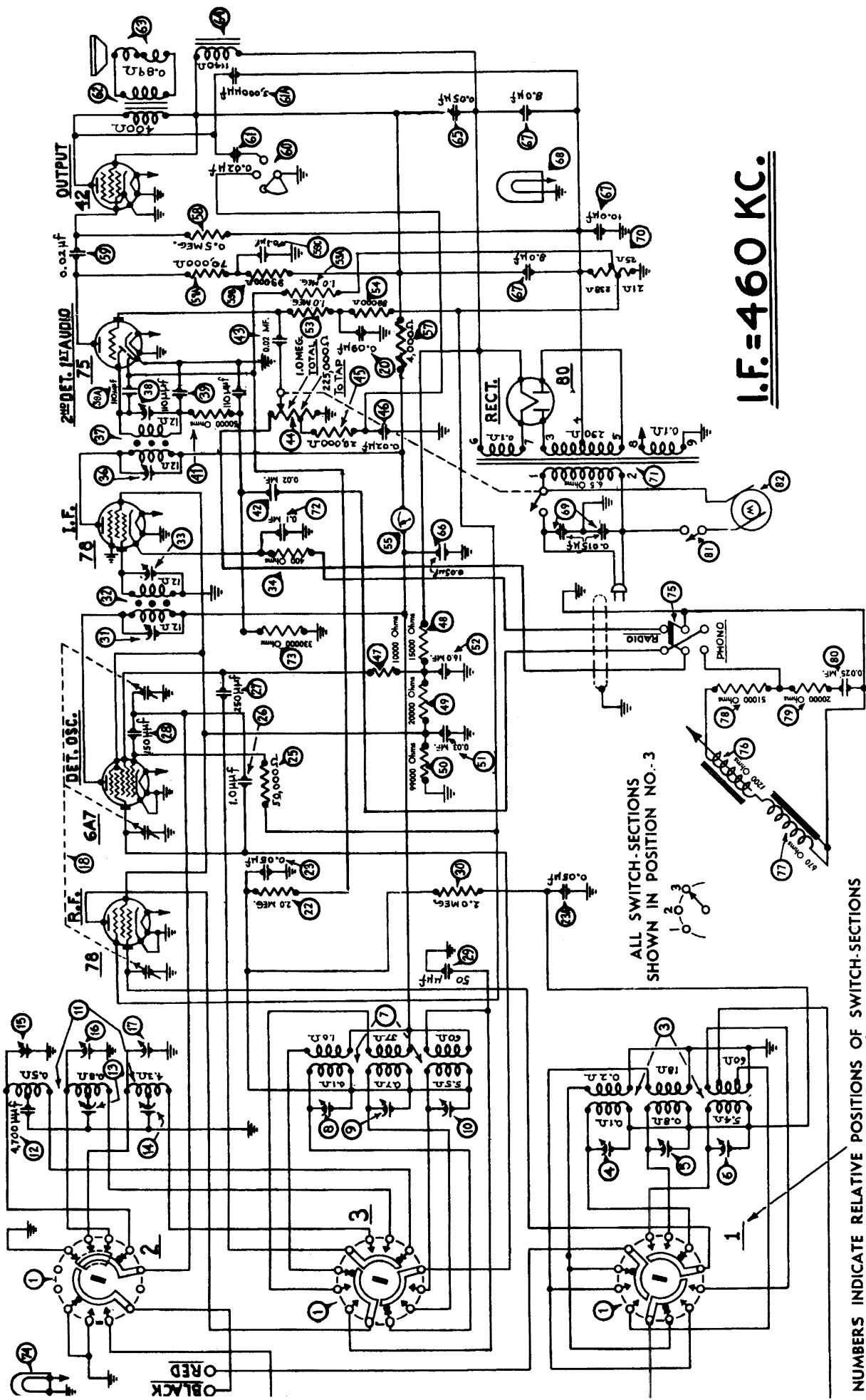
Description	Part No.
1 Wave Band Switch.....	42-1107
2 Wavetrap.....	38-6850
3 Antenna Transformer.....	32-1699
4 Compensating Condenser (Ant. S.W.).....	Part of 8
6 Compensating Condenser (Ant. Police).....	Part of 3
6 Compensating Condenser (Ant. Standard).....	Part of 9
7 R. F. Transformer.....	32-1636
8 Compensating Condenser (R.F. Short-Wave).....	Part of 7
9 Compensating Condenser (R.F. Police).....	Part of 7
10 Compensating Condenser (R.F. Standard).....	Part of 7
11 Oscillator Transformer.....	32-1637
12 Condenser (.0047 Mfd. Mica).....	30-1052
13 Compensating Condenser (Osc. Police).....	Part of 11
14 Compensating Condenser (Osc. H. F. Standard).....	Part of 11
15 Compensating Condenser (Osc. S. W.).....	Part of 11
16 Compensating Condenser (Osc. L.F. Police).....	Part of 31-6027
17 Compensating Condenser (Osc. L.F. Standard).....	Part of 31-6027
18 Tuning Condenser Assembly.....	31-1526
19 Resistor (400 ohms Flexible) (Yellow, Black, Brown).....	33-3016
20 Condenser (.09 Mfd. Twin Bakelite Block).....	4989-DG
21 Resistor (.5 Meg.) (Yellow, White, Yellow).....	6097
22 Resistor (2 Megs.) (Red, Black, Green).....	33-1025
23 Condenser (.05 Mfd. Tubular).....	30-4020
23a Condenser (.05 Mfd. Tubular).....	30-4020
24 Resistor (300 ohms Flexible) (Orange, Black, Brown).....	33-3010
25 Resistor (50000 ohms) (Green, Brown, Orange).....	6098
26 Condenser (1 Mmfd.).....	Part of 18
27 Condenser (.00025 Mfd. Mica).....	30-1032
28 Condenser (.00015 Mfd. Mica).....	30-1033
29 Condenser (.00005 Mfd. Mica).....	30-1029
30 Resistor (2 Megs.) (Red, Black, Green).....	33-1025
31 Compensating Condenser (1st I.F. Primary).....	Part of 32

Description	Part No.
32 1st I.F. Transformer.....	32-1646
33 Compensating Condenser (1st I.F. Secondary).....	Part of 32
34 Resistor (400 ohms Flexible) (Yellow, Black, Brown).....	33-3016
35 Condenser (.1 Mfd. Tubular).....	30-4122
36 Compensating Condenser (2nd I.F. Pri.).....	Part of 37
37 2nd I.F. Transformer.....	32-1647
38 Compensating Condenser (2nd I.F. Sec.).....	Part of 37
39 Condenser (.00011 Mfd. Mica).....	30-1031
39a Condenser (.00011 Mfd. Mica).....	30-1031
40 Condenser (.00011 Mfd. Mica).....	30-1031
41 Resistor (50000 ohms) (Green, Brown, Orange).....	6098
42 Condenser (.02 Mfd. Tubular).....	30-4215
43 Condenser (.02 Mfd. Tubular).....	30-4215
44 Volume Control and On-Off Switch.....	33-5105
45 Resistor (20000 ohms) (Red, Black, Orange).....	33-1178
46 Condenser (.02 Mfd. Tubular).....	30-4215
47 Resistor (10000 ohms) (Brown, Black, Orange).....	4412
48 Resistor (15000 ohms) (Brown, Black, Orange).....	5718
49 Resistor (20000 ohms) (Red, Black, Orange).....	6649*
50 Resistor (99000 ohms) (White, White, Orange).....	6099†
51 Condenser (.3 Mfd. Bakelite Block).....	6287-DG
52 Condenser (16 Mfd. Electrolytic).....	30-2118
53 Resistor (1 Meg.) (Brown, Black, Green).....	33-1096
54 Resistor (99000 ohms) (White, White, Orange).....	6099
55 Shadow Tuning Meter.....	45-2086
56 Resistor (4000 ohms) (Yellow, Black, Red).....	33-1040
57 Resistor (4000 ohms) (Yellow, Black, Red).....	7832
58 Resistor (.5 meg.) (Yellow, White, Yellow).....	6097
59 Condenser (.02 Mfd. Tubular).....	30-4113
59a Resistor (70000 ohms) (Violet, Black, Orange).....	5385
59b Resistor (99000 ohms) (White, White, Orange).....	6099
59c Condenser (.1 Mfd. Tubular).....	30-4122
60 Tone Control (3 position).....	30-4332
61 Condenser in Tone Control.....	Part of 60
61a Condenser (.003 Mfd. Tubular).....	30-4042
62 Output Transformer.....	32-7178
63 Voice Coil & Cone Assembly (K-32).....	36-3159
64 Field Coil & Pot Assembly (K-32).....	36-3498
65 Condenser (.05 Mfd. Tubular).....	30-4020
66 Condenser (.05 Mfd. Tubular).....	30-4020
67 Condenser (8 Mfd., 8 Mfd., 10 Mfd. Electrolytic).....	30-2073
68 Pilot Lamp (Shadow Tuning Meter).....	Part of 69
69 Condenser (.015 Mfd. Twin Bakelite Block).....	3793-DG
70 Resistor (BC Wirewound—21 ohms, 263 ohms).....	33-3069
71 Power Transformer (115 Volts 60 Cycles).....	32-7384
(115 Volts 25 Cycles).....	32-7385
(230 Volts 50 Cycles).....	33-7386
72 Condenser (.1 Mfd. Tubular).....	30-4122
73 Resistor (330,000 ohms) (Orange, Orange, Yellow).....	33-1200
74 Pilot Lamp.....	34-2064
Dial Scale.....	27-5098
Dial Hub & Set Screw.....	31-1550
Dial Front Spring.....	28-2837
Knob (Station Selector).....	27-4206
Knob (Fine Tuning).....	27-4207
Knob (Waveband).....	27-4219
Knob (Volume Control, Tone Control).....	27-4208
Tube Shield.....	28-2726
Tube Shield Base.....	28-2725
Tube Socket (4-Prong).....	27-6034
Tube Socket (6-Prong).....	27-6036
Tube Socket (7-Prong).....	27-6037
Speaker Plug Socket.....	27-6033
Chassis Mtg. Screw.....	W-1495
Chassis Mtg. Washer (Rubber).....	27-4198
Electric Cord & Plug.....	L-943-A

*After Run 2, this is 10000 ohms. Part 3524.

†After Run 2, this is 20000 ohms. Part 6650.

MODEL 630 (Later Production)



I.F. = 460 KC.

ALL SWITCH-SECTIONS
SHOWN IN POSITION NO.-3

NUMBERS INDICATE RELATIVE POSITIONS OF SWITCH-SECTIONS
FROM FRONT OF CHASSIS.

MODEL 630

Later 1935 Production Runs

This sheet also covers the Philco Radio-Phonograph 630PF. All circuit and part number changes up to date have been included.

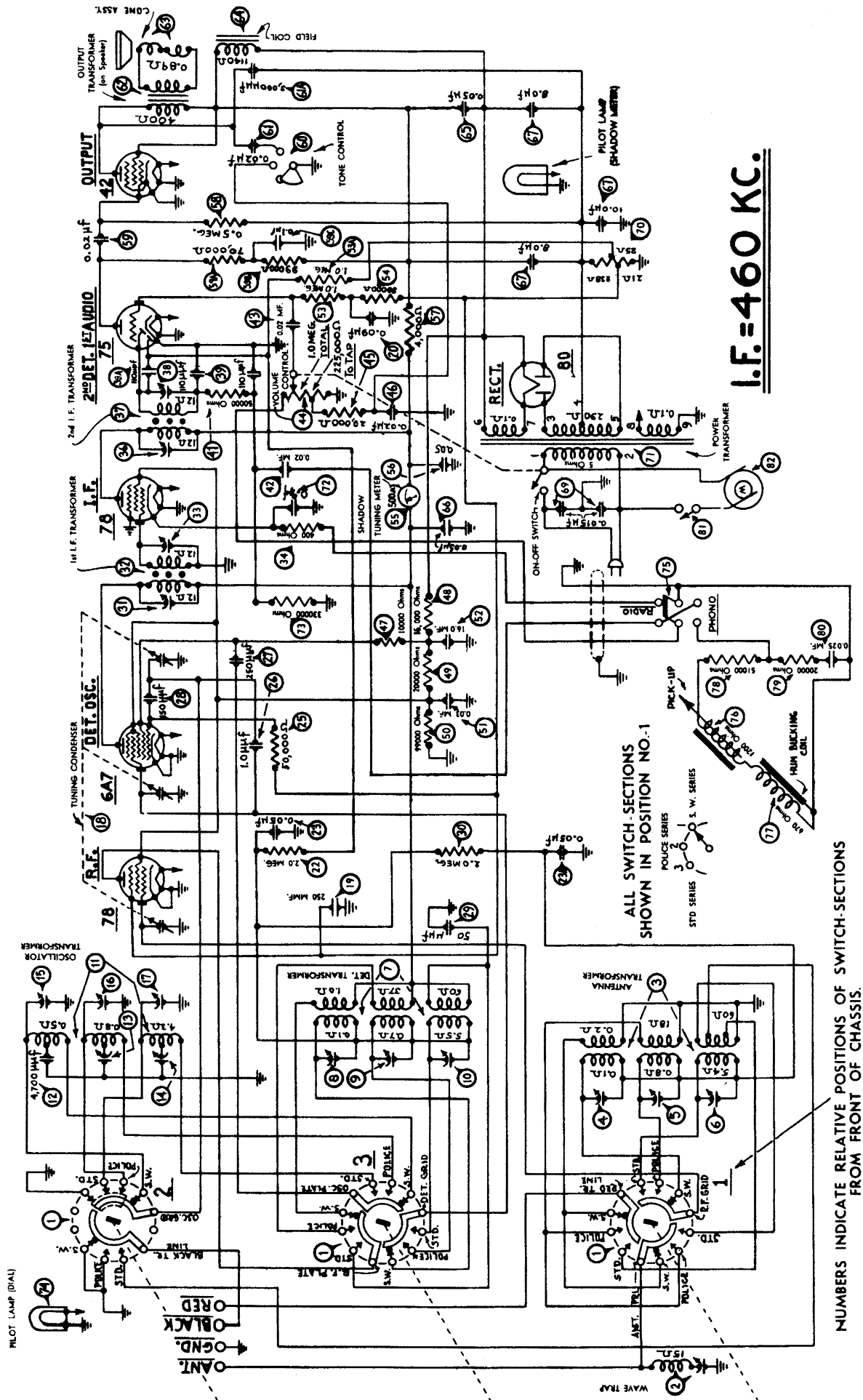
Beginning with run No. 5 the grid bias arrangement for the 78 R.F. and 6A7 1st detector was changed. A fixed bias from the B.C. resistor is fed through the AVC circuit to the grids of these tubes.

PARTS LIST

Description	Part No.
① Wave Band Switch.....	42-1152
② Wavetrap	38-6850
③ Antenna Transformer	32-1867
④ Compensating Condenser (Ant. S.W.).....	Part of ③
⑤ Compensating Condenser (Ant. Police).....	Part of ③
⑥ Compensating Condenser (Ant. Standard).....	Part of ③
⑦ R. F. Transformer.....	32-1868
⑧ Compensating Condenser (R.F. Short-Wave)...	Part of ⑦
⑨ Compensating Condenser (R.F. Police).....	Part of ⑦
⑩ Compensating Condenser (R.F. Standard)	Part of ⑦
⑪ Oscillator Transformer	32-1869
⑫ Condenser (.0047 Mfd. Mica).....	30-1052
⑬ Compensating Condenser (Osc. Police).....	Part of ⑪
⑭ Compensating Condenser (Osc. H.F. Standard)	Part of ⑪
⑮ Compensating Condenser (Osc. S.W.).....	Part of ⑪
⑯ Compensating Condenser (Osc. L.F. Police)	Part of ⑪
⑰ Compensating Condenser (Osc. L.F. Standard)	Part of ⑪
⑱ Tuning Condenser Assembly.....	31-1741
⑲ Condenser (.09 Mfd. Twin Bakelite Block)....	4989-DG
⑳ Resistor (1 Meg.) (Brown, Black, Green).....	33-1096
㉑ Condenser (.05 Mfd. Tubular).....	30-4020
㉒ Condenser (.05 Mfd. Tubular).....	30-4020
㉓ Resistor (50000 ohms) (Green, Brown, Orange)	6098
㉔ Condenser (1 Mmfd.).....	Part of ⑱
㉕ Condenser (.00025 Mfd. Mica).....	30-1032
㉖ Condenser (.00015 Mfd. Mica).....	30-1033
㉗ Condenser (.00005 Mfd. Mica).....	30-1029
㉘ Resistor (51000 ohms) (Green, Brown, Orange)	6098
㉙ Compensating Condenser (1st I.F. Primary)...	Part of ㉙
㉚ 1st I.F. Transformer.....	32-1646
㉛ Compensating Condenser (1st I.F. Secondary)...	Part of ㉙
㉜ Resistor (400 ohms Flexible) (Yellow, Black, Brown).....	33-3016
㉝ Compensating Condenser (2nd I.F. Pri.).....	Part of ㉙
㉞ 2nd I.F. Transformer.....	32-1647
㉟ Compensating Condenser (2nd I.F. Sec.).....	Part of ㉙
㊱ Condenser (.00011 Mfd.) (Twin Bakelite).....	8035-DG
㊲ Condenser (.00011 Mfd. Mica).....	30-1031
㊳ Condenser (.00011).....	Part of ㉙
㊴ Resistor (50000 ohms) (Green, Brown, Orange)	6098
㊵ Condenser (.02 Mfd. Tubular)	30-4215
㊶ Condenser (.02 Mfd. Tubular)	30-4215
㊷ Volume Control and On-Off Switch.....	33-5105
㊸ Resistor (20000 ohms) (Red, Black, Orange)...	33-1178
㊹ Condenser (.02 Mfd. Tubular)	30-4215
㊺ Resistor (10000 ohms) (Brown, Black, Orange)	4412
㊻ Resistor (15000 ohms) (Brown, Black, Orange)	5718
㊼ Resistor (20000 ohms) (Red, Black, Orange) ..	3524
㊽ Resistor (20000 ohms) (Red, Black, Orange)...	6649
㊾ Condenser (.15 Mfd. Tubular).....	30-4191
㊿ Condenser (16 Mfd. Electrolytic).....	30-2118

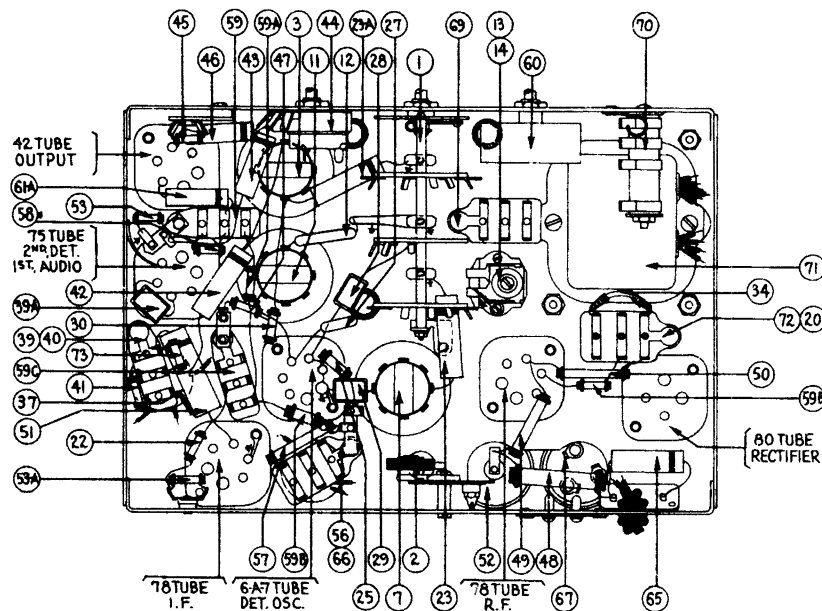
Description	Part No.
㊿ Resistor (1 Meg.) (Brown, Black, Green).....	33-1096
㊿a Resistor (1. Meg.) (Brown, Black, Green).....	33-1096
㊿b Resistor (99000 ohms) (White, White, Orange)	6099
㊿c Shadow Tuning Meter.....	45-2086
㊿d Condenser (.05 Mf. Twin Bakelite).....	3615-DG
㊿e Resistor (4000 ohms) (Yellow, Black, Red)....	33-1031
㊿f Resistor (490,000 ohms) (Yellow, White, Yellow).....	33-1097
㊿g Condenser (.02 Mfd. Bakelite).....	8318-SU
㊿h Resistor (70000 ohms) (Violet, Black, Orange)	5385
㊿i Resistor (99000 ohms) (White, White, Orange)	6099
㊿j Condenser (.09 Mf. Bakelite).....	4989-SG
㊿k Tone Control (3 position).....	30-4332
㊿l Condenser in Tone Control.....	Part of ㊿k
㊿m Condenser (.003 Mfd. Tubular).....	30-4042
㊿n Output Transformer	32-7178
㊿o Voice Coil & Cone Assembly (K-32).....	36-3159
㊿p Field Coil & Pot Assembly (K-32).....	36-3498
㊿q Condenser (.05 Mfd. Tubular)	30-4020
㊿r Condenser (.05 Mfd.).....	Part of ㊿q
㊿s Condenser (8 Mfd., 8 Mfd., 10 Mfd. Electrolytic)	30-2073
㊿t Pilot Lamp (Shadow Tuning Meter).....	Part of ㊿t
㊿u Condenser (.015 Mfd. Twin Bakelite Block)...	3793-DG
㊿v Resistor (BC Wirewound—22 ohms, 25 ohms, 210 ohms).....	33-3222
㊿w Power Transformer (115 Volts 60 Cycles)....	32-7384
(115 Volts 25 Cycles).....	32-7385
(230 Volts 50 Cycles).....	33-7386
㊿x Condenser (.05 Mf.).....	Part of ㊿x
㊿y Resistor (330,000 ohms) (Orange, Orange, Yellow).....	33-1200
㊿z Pilot Lamp	34-2039
㊿aa Phono Switch Cable Assy.....	35-3014
㊿ab Pickup Head Assy.....	35-2014
㊿ac Hum Bucking Coil Assy.....	32-1940
㊿ad Resistor (51,000 ohms).....	6098
㊿ae Resistor (20,000 ohms).....	33-1178
㊿af Condenser (.025 Mf.).....	7653-SU
㊿ag Automatic Stop	6345
㊿ah Phono. Motor (115 V. 60 Cycle).....	35-1112
㊿ai Dial Scale	27-5098
㊿aj Dial Hub & Set Screw.....	31-1550
㊿ak Dial Front Spring.....	28-2837
㊿al Knob (Station Selector).....	27-4206
㊿am Knob (Fine Tuning)	27-4207
㊿an Knob (Waveband)	27-4219
㊿ao Knob (Volume Control, Tone Control).....	27-4208
㊿ap Tube Shield	28-2726
㊿aq Tube Shield Base.....	28-2725
㊿ar Tube Socket (4-Prong).....	27-6034
㊿as Tube Socket (6-Prong).....	27-6036
㊿at Tube Socket (7-Prong).....	27-6037
㊿au Speaker Plug Socket.....	27-6033
㊿av Chassis Mfg. Screw.....	W-1495
㊿aw Chassis Mtg. Washer (Rubber).....	27-4198
㊿ax Electric Cord & Plug.....	L-943-A

MODEL 635



L.F.=460 KC.

NUMBERS INDICATE RELATIVE POSITIONS OF SWITCH-SECTIONS FROM FRONT OF CHASSIS.



Replacement Parts—Model 635

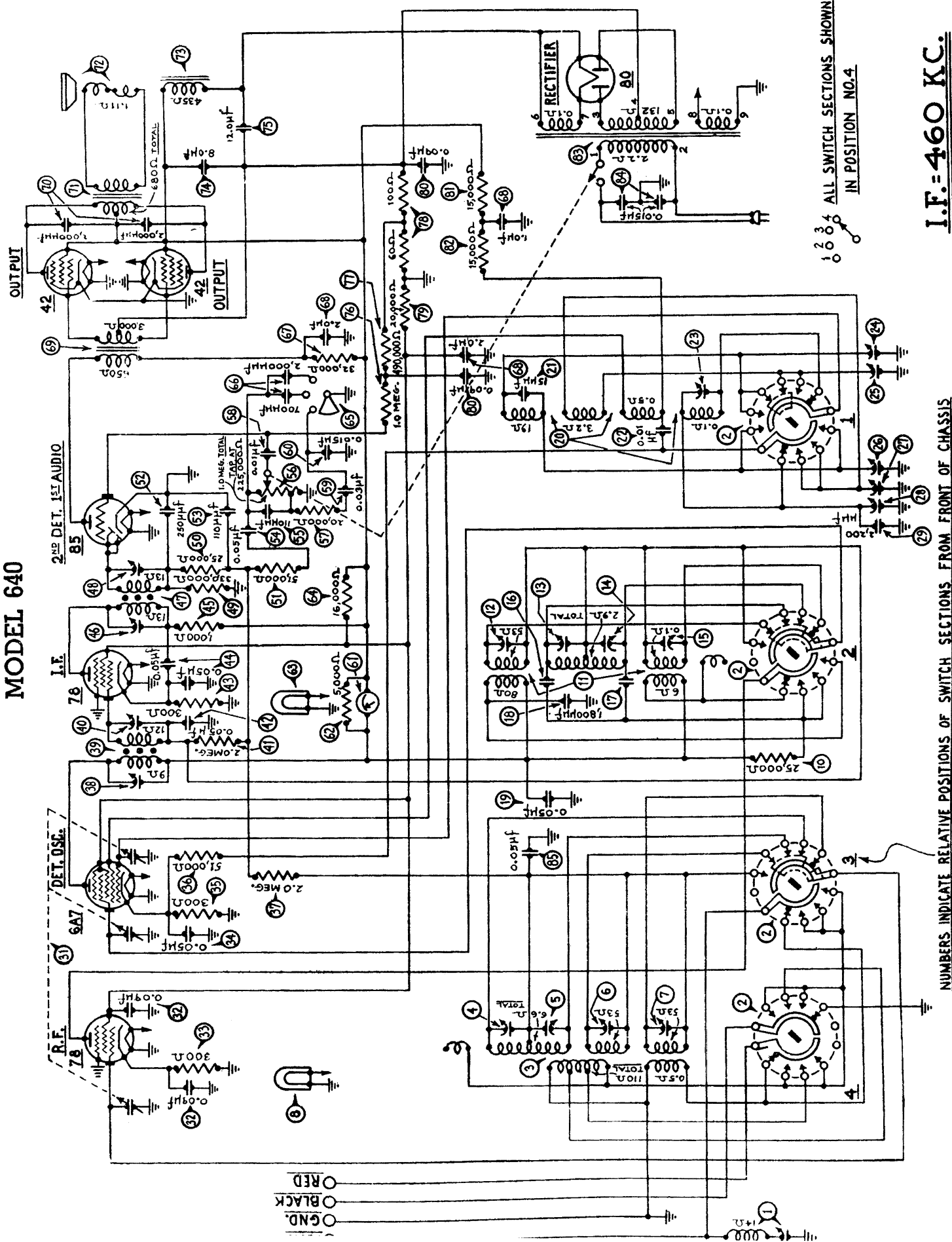
Description	Part No.	Description	Part No.
① Wave Band Switch.....	42-1152	⑤⑤ Resistor (490,000 ohms) (Yellow, White, Yel- low).....	33-1097
② Wavetrap.....	38-6850	⑤⑥ Condenser (.02 Mfd. Bakelite).....	8318-SU†
③ Antenna Transformer.....	32-1867	⑤⑦a Resistor (70000 ohms) (Violet, Black, Orange).....	5385
④ Compensator (Ant. S.W.).....	Part of ③	⑤⑦b Resistor (99000 ohms) (White, White, Orange).....	6099
④ Compensator (Ant. Police).....	Part of ③	⑤⑦c Condenser (.09 Mf. Bakelite).....	4989-SG‡
④ Compensator (Ant. Standard).....	Part of ③	⑤⑧ Tone Control (3 position).....	30-4332†
④ R. F. Transformer.....	32-1868	⑤⑨ Condenser in Tone Control.....	Part of ⑤⑧
④ Compensator (R.F. Short-Wave).....	Part of ④	⑤⑨a Condenser (.003 Mfd. Tubular).....	30-4042
④ Compensator (R.F. Police).....	Part of ④	⑤⑩ Output Transformer.....	32-7178
④ Compensator (R.F. Standard).....	Part of ④	⑤⑩ Voice Coil & Cone Assembly (K-32).....	36-3159
④ Oscillator Transformer.....	32-1869	⑤⑪ Field Coil & Pot Assembly (K-32).....	36-3498
④ Condenser (.0047 Mfd. Mica).....	30-1052	⑤⑪ Condenser (.05 Mfd. Tubular).....	30-4020
④ Compensator (Osc. L.F. Police).....	31-6027	⑤⑪ Condenser (.05 Mfd.).....	Part of ⑤⑪
④ Compensator (Osc. L.F. Standard).....	Part of ④	⑤⑪ Condenser (8 Mfd., 8 Mfd., 10 Mfd. Electrolytic).....	30-2073
④ Compensator (Osc. S.W.).....	Part of ④	⑤⑪ Pilot Lamp (Shadow Tuning Meter).....	Part of ⑤⑪
④ Compensator (Osc. Police).....	Part of ④	⑤⑪ Condenser (.015 Mfd. Twin Bakelite Block).....	3793-DG‡
④ Compensator (Osc. Standard).....	Part of ④	⑤⑪ Resistor (BC Wirewound—22 ohms, 25 ohms, 210 ohms).....	33-3222
④ Tuning Condenser Assembly.....	31-1741	⑤⑪ Power Transformer (115 Volts 60 Cycles).....	32-7384
④ Condenser (.00025 Mica).....	5858	⑤⑪ (115 Volts 25 Cycles).....	32-7385
④ Condenser (.09 Mfd. Twin Bakelite Block).....	4989-DG‡	⑤⑪ (230 Volts 50 Cycles).....	32-7420
④ Resistor (1 Meg.) (Brown, Black, Green).....	33-1096	⑤⑪ Condenser (.09 Mf.).....	Part of ⑤⑪
④ Condenser (.05 Mfd. Tubular).....	30-4020	⑤⑪ Resistor (330,000 ohms) (Orange, Orange, Yel- low).....	33-1200
④ Condenser (.05 Mfd. Tubular).....	30-4020	⑤⑪ Pilot Lamp.....	34-2039
④ Resistor (50000 ohms) (Green, Brown, Orange).....	6098	⑤⑪ Phono Switch Cable Assy.....	35-3014
④ Condenser (1 Mmfd.).....	Part of ④	⑤⑪ Pickup Head Assy.....	35-2014
④ Condenser (.00025 Mfd. Mica).....	30-1032	⑤⑪ Hum Bucking Coil Assy.....	32-1940
④ Condenser (.00015 Mfd. Mica).....	30-1033	⑤⑪ Resistor (51,000 ohms).....	6098
④ Condenser (.00005 Mfd. Mica).....	30-1029	⑤⑪ Resistor (20,000 ohms).....	33-1178
④ Resistor (51000 ohms) (Green, Brown, Orange).....	6098	⑤⑪ Condenser (.025 Mf.).....	7653-SU†
④ Compensator (1st I.F. Primary).....	Part of ④	⑤⑪ Automatic Stop.....	6345
④ 1st I.F. Transformer.....	32-1646	⑤⑪ Phono. Motor (115 V. 60 Cycle).....	35-1112
④ Compensator (1st I.F. Secondary).....	Part of ④	⑤⑪ Dial Scale.....	27-5098
④ Resistor (400 ohms Flexible) (Yellow, Black, Brown).....	33-3016	⑤⑪ Dial Hub & Set Screw.....	31-1550
④ Compensator (2nd I.F. Pri.).....	Part of ④	⑤⑪ Dial Front Spring.....	28-2837
④ 2nd I.F. Transformer.....	32-1647	⑤⑪ Knob (Station Selector).....	27-4206
④ Compensator (2nd I.F. Sec.).....	Part of ④	⑤⑪ Knob (Fine Tuning).....	27-4207
④ Condenser (.00011 Mfd.) (Twin Bakelite).....	8035-DG‡	⑤⑪ Knob (Waveband).....	27-4219
④ Condenser (.00011 Mfd. Mica).....	30-1031	⑤⑪ Knob (Volume Control, Tone Control).....	27-4208
④ Condenser (.00011).....	Part of ④	⑤⑪ Tube Shield.....	28-2726
④ Resistor (50000 ohms) (Green, Brown, Orange).....	6098	⑤⑪ Tube Shield Base.....	28-2725
④ Condenser (.02 Mfd. Tubular).....	30-4215	⑤⑪ Tube Socket (4-Prong).....	27-6034
④ Condenser (.02 Mfd. Tubular).....	30-4215	⑤⑪ Tube Socket (6-Prong).....	27-6036
④ Volume Control and On-Off Switch.....	33-5105	⑤⑪ Tube Socket (7-Prong).....	27-6037
④ Resistor (20000 ohms) (Red, Black, Orange).....	33-1178	⑤⑪ Speaker Plug Socket.....	27-6033
④ Condenser (.02 Mfd. Tubular).....	30-4215	⑤⑪ Chassis Mfg. Screw.....	W-1495
④ Resistor (10000 ohms) (Brown, Black, Orange).....	4412	⑤⑪ Chassis Mtg. Washer (Rubber).....	27-4198
④ Resistor (16000 ohms) (Brown, Black, Orange).....	33-316633	⑤⑪ Electric Cord & Plug.....	1-943-A
④ Resistor (20000 ohms) (Red, Black, Orange).....	3524	⑤⑪ Glowing Arrow Mask.....	27-5162
④ Resistor (20000 ohms) (Red, Black, Orange).....	6649	⑤⑪ Glowing Arrow Screen.....	27-5161
④ Condenser (.15 Mfd. Tubular).....	30-4191	⑤⑪ Mask Arm.....	29-3274
④ Condenser (.16 Mfd. Electrolytic).....	30-2118*	⑤⑪ Link.....	29-3285
④ Resistor (1 Meg.) (Brown, Black, Green).....	33-1096	⑤⑪ Coupling.....	29-3586
④ Resistor (1 Meg.) (Brown, Black, Green).....	33-1096	⑤⑪ Shadow Screen.....	27-5120
④ Resistor (99000 ohms) (White, White, Orange).....	6099	⑤⑪ Inverted Dial Scale.....	27-5121
④ Shadow Tuning Meter.....	45-2083		
④ Condenser (.05 Mf. Twin Bakelite).....	3615-1DG‡		
④ Resistor (4000 ohms) (Yellow, Black, Red).....	33-1031		

*CODE 124:—30-2126

† 30-4350

‡ Use "O" (ODG, etc.) Type Condensers

MODEL 640

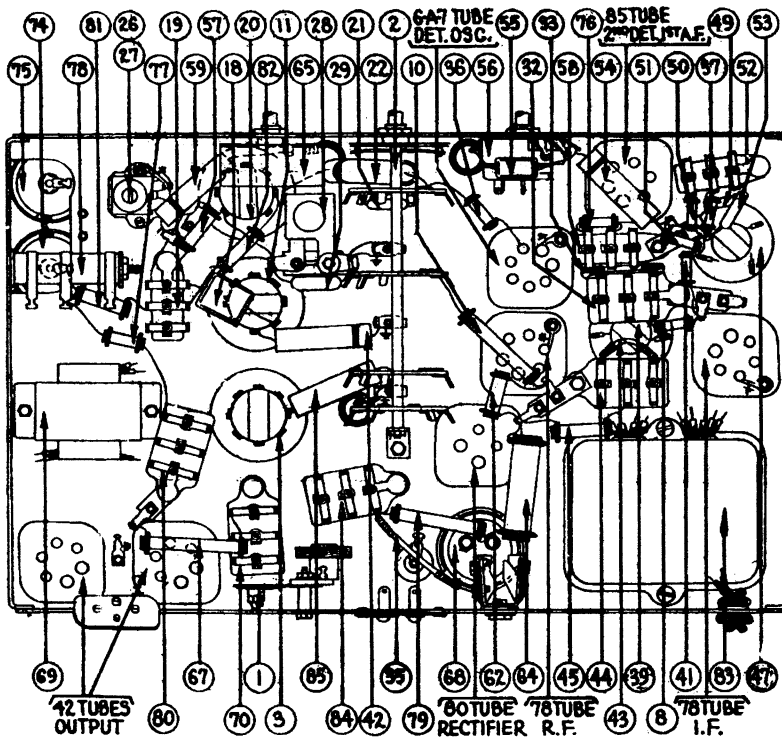


ALL SWITCH SECTIONS SHOWN
IN POSITION NO. 4

I.F. = 460 KC.

NUMBERS INDICATE RELATIVE POSITIONS OF SWITCH SECTIONS FROM FRONT OF CHASSIS

Replacement Parts—Model 640

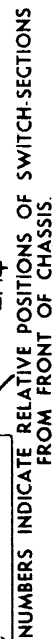


Description	Part No.
1 Wave Trap.....	38-6850
2 Waveband Switch.....	42-1114
3 Antenna Transformer.....	32-1708
4 Compensating Condenser (Ant.) (Police).....	Part of 3
5 Compensating Condenser (Ant.) (Standard).....	Part of 3
6 Compensating Condenser (Ant.) (Longwave).....	Part of 3
7 Compensating Condenser (Ant.) (Shortwave).....	Part of 3
8 Resistor (.5 meg.) (Yellow-White-Yellow).....	6097
9 Resistor (25000 ohms) (Red-Green-Yellow).....	3656
11 R.F. Transformer.....	32-1709
12 Compensating Condenser (R.F. Longwave).....	Part of 11
13 Compensating Condenser (R.F. Broadcast).....	Part of 11
14 Compensating Condenser (R.F. Police).....	Part of 11
15 Compensating Condenser (R.F. Shortwave).....	Part of 11
16 Condenser.....	Part of 11
17 Condenser.....	Part of 11
18 Condenser (.0018 Mfd. Mica).....	6018
19 Condenser (.05 Mfd. Bakelite Block).....	3615-SG
20 Oscillator Transformer.....	32-1710
21 Condenser (.000015 Mfd. Mica).....	30-1030
22 Condenser (.01 Mfd. Tubular).....	*30-4145
23 Compensating Condenser (Osc. S.W.).....	Part of 22
24 Compensating Condenser (Osc. Longwave).....	Part of 22
25 Compensating Condenser (Osc. B.C. & Police).....	Part of 22
26 Compensating Condenser (Osc. L.W. Series) Part of 31-6044	}
27 Compensating Condenser (Osc. B.C. Series) Part of 31-6044	
28 Compensating Condenser (Osc. S.W. Series).....	04000-R
29 Condenser (.0022 Mfd. Mica).....	30-1057
30 Tuning Condenser Assembly.....	31-1555
32 Condenser (.09 Mfd. Twin Bakelite).....	4989-DG
33 Resistor (300 ohms) (Orange-Black-Black).....	33-3010
34 Condenser (.05 Mfd. Tubular) (On top of chassis).....	30-4327
35 Resistor (300 ohms Flexible) (Orange-Black-Black).....	33-3010
36 Resistor (50000 ohms) (Green-Brown-Orange).....	6098
37 Resistor (2 Megs.) (Red-Black-Green).....	33-1025

Description	Part No.
38 Compensating Condenser (1st I.F. Primary).....	Part of 38
39 1st I.F. Transformer.....	32-1833
40 Compensating Condenser (1st I.F. Secondary).....	Part of 38
41 Resistor (2 Megs.) (Red-Black-Green).....	33-1025
42 Condenser (.05 Mfd. Tubular).....	30-4020
43 Resistor (300 ohms Flexible) (Orange-Black-Black).....	33-3010
44 Condenser (.05 Mfd. Twin Bakelite Block).....	3615-DU
45 Resistor (1000 ohms) (Brown-Black-Red).....	5837
46 Compensating Condenser (2d I.F. Primary).....	Part of 47
47 2d I.F. Transformer.....	32-1836
48 Compensating Condenser (2d I.F. Secondary).....	Part of 47
49 Resistor (330000 ohms) (Orange-Orange-Yellow).....	33-1200
50 Resistor (25000 ohms) (Red-Green-Orange).....	33-1013
51 Resistor (50000 ohms) (Green-Brown-Orange).....	6098
52 Condenser (.00025 Mfd. Bakelite Block).....	8317-SG
53 Condenser (.00014 Mfd. Mica).....	30-1031
54 Condenser (.05 Mfd. Tubular).....	30-4020
55 Condenser (.00011 Mfd. Mica).....	30-1031
56 Volume Control and On-Off Switch.....	33-5113
57 Resistor (20000 ohms) (Red-Black-Orange).....	6650
58 Condenser (.01 Mfd. Bakelite Block).....	3903-SU
59 Condenser (.03 Mfd. Mica).....	30-4025
60 Condenser (in Tone Control).....	Part of 60
61 Shadow Tuning Meter.....	45-2080
62 Resistor (4000 ohms) (Yellow-Black-Red).....	33-1040
63 Pilot Lamp (Shadow Tuning Meter).....	Part of 63
64 Resistor (16000 ohms) (Brown-Blue-Orange).....	33-1201
65 Tone Control.....	30-4333
66 Condensers in Tone Control.....	Part of 66
67 Resistor (32000 ohms) (Orange-Red-Orange).....	3525
68 Condenser (Electrolytic) (2 Mfd., 2 Mfd., 1 Mfd.).....	30-2114
69 Audio Transformer.....	32-7471
70 Condenser (.002 Mfd. Twin Bakelite Block).....	7296-DU
71 Voice Coil & Cone Assembly { K-31..... 36-3159 H-21..... 02625	
72 Field Coil & Pot Assembly { K-31..... 36-3463 H-21..... 36-3461	
73 Condenser (8 Mfd. Electrolytic).....	30-2025
74 Condenser (12 Mfd. Electrolytic).....	30-2117
75 Resistor (1 Meg.) (Brown-Black-Green).....	33-1171
76 Resistor (.5 Meg.) (Yellow-White-Yellow).....	33-1169
77 Resistor (B.C. Wirewound, 60 Ohms, 100 Ohms).....	33-3208
78 Resistor (20000 ohms) (Red-Black-Orange).....	6649
79 Condenser (.09 Mfd. Twin Bakelite Block).....	4989-DG
80 Resistor (15000 ohms) (Brown-Green-Orange).....	6208
81 Resistor (15000 ohms) (Brown-Green-Orange).....	6208
82 Power Transformer (115 Volts 60 Cycles).....	32-7462
83 Condenser (.015 Mfd. Twin Bakelite Block).....	3793-DG
84 Condenser (.05 Mfd. Tubular).....	30-4020
Dial Scale.....	27-5103
Dial Hub and Set Screw Assembly.....	31-1550
Dial Spring Clamp.....	28-2837
Tube Shield.....	28-2726
Tube Shield Base.....	28-2725
Socket (4-Prong).....	27-6034
Socket (6-Prong).....	27-6036
Socket (7-Prong).....	27-6037
Socket (Speaker Plug).....	27-6033
Knob (Station Selector).....	27-4206
Knob (Fine Tuning).....	27-4207
Knob (Waveband).....	27-4219
Knob (Volume Control or Tone Control).....	27-4208
Bezel.....	28-2933
Glass.....	27-7931
Chassis Mtg. Screw.....	W-1495
Chassis Mtg. Washer.....	27-4198
Chassis Mtg. Rubber Bumper.....	27-4197

*After Run 2, this is 30-1032 Mica, List .35.

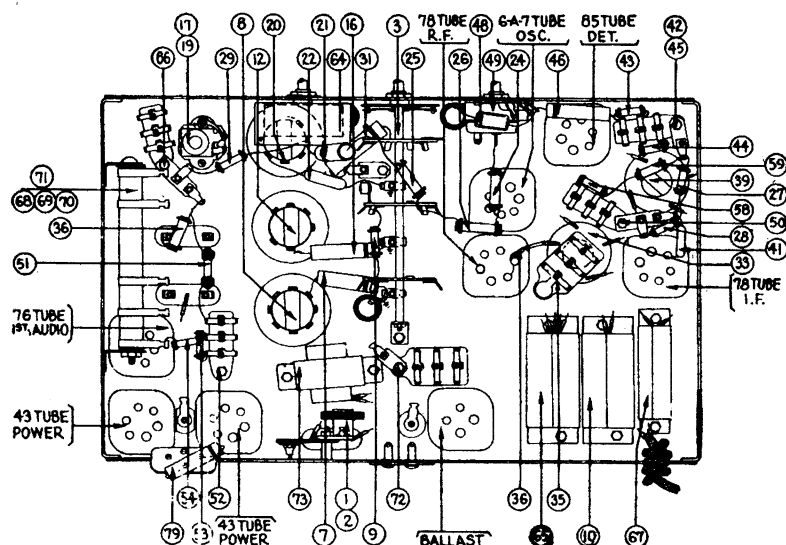
(b) (5) DPP



2 8 2 ALL SWITCH-SECTIONS SHOWN IN POSITION NO.2

I. F. - 460 K. C.

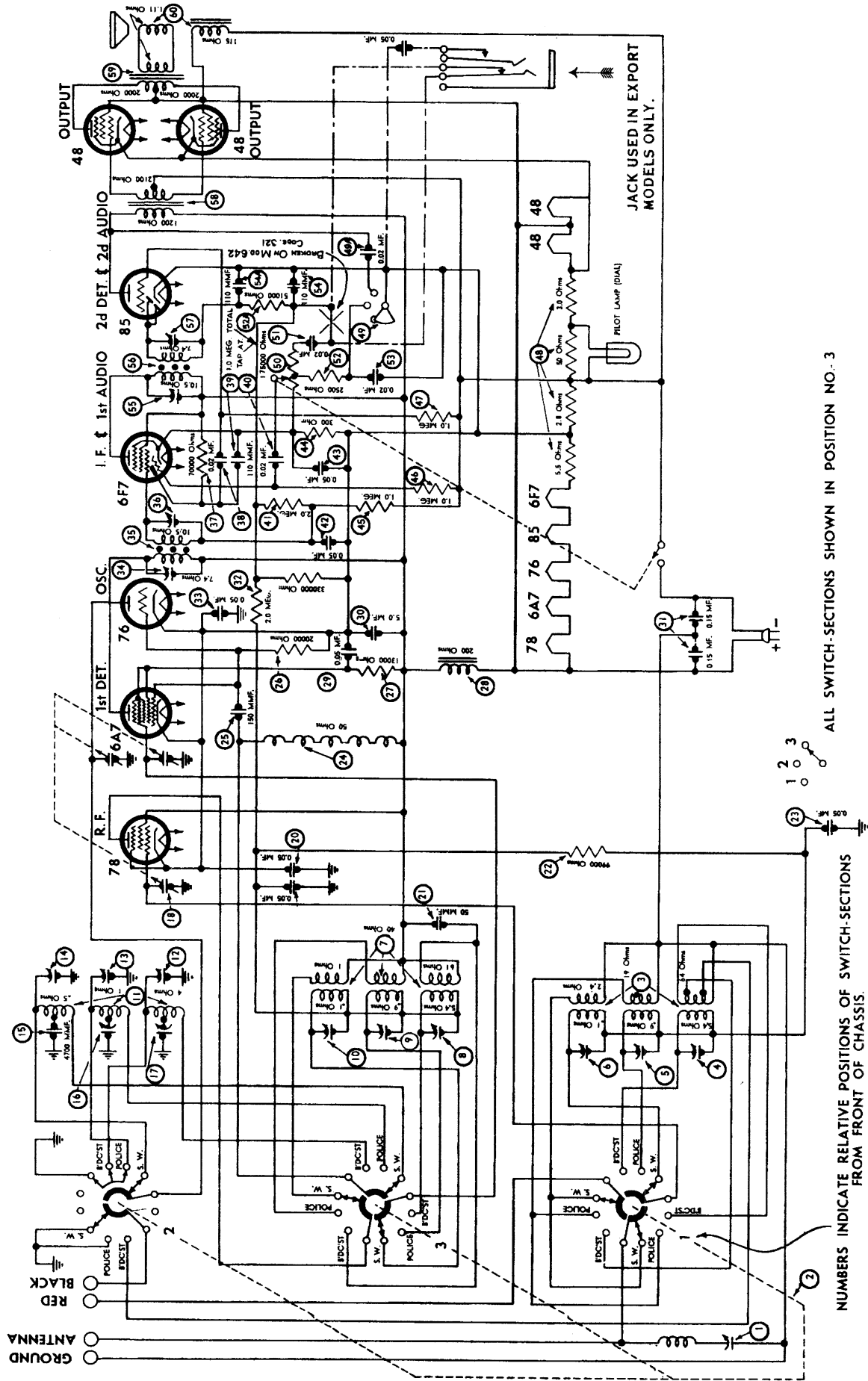
Replacement Parts for Model 641



Description	Part No.
1 Coil—Wavetrap.....	38-6972
2 Condenser—Wavetrap.....	38-6972
3 Waveband Switch.....	42-1130
4 Padder.....	Part of 8
5 Padder.....	Part of 8
6 Padder.....	Part of 8
7 Condenser (0.05 mfd.).....	30-4020
8 Antenna Transformer.....	32-1827
9 Resistor (160,000 ohms).....	33-1191
10 Condenser (2.0 mfd.).....	30-4355
11 Tuning Condenser Gang.....	31-1645
12 R. F. Transformer.....	32-1828
13 Padder.....	Part of 12
14 Padder.....	Part of 12
15 Padder.....	Part of 12 S.W.
16 Condenser (0.05 mfd.).....	30-4020
17 Padder (Nut S.W.).....	31-6027
17A Condenser (1.2 mmf.).....	30-4020
18 Padder.....	Part of 20
19 Padder (Screw, Broadcast).....	Part of 17
20 Oscillator Transformer.....	32-1829
21 Condenser (0.01 mfd.).....	30-4169
22 Condenser (2200 mmf.).....	30-1057
23 Padder (S.W.).....	Part of 20
24 Resistor (51,000 ohms).....	6098
25 Resistor (5000 ohms).....	5310
26 Resistor (10,000 ohms).....	4412
27 Resistor (1.0 meg.).....	33-1096
28 Resistor (1.0 meg.).....	33-1096
29 Resistor (13,000 ohms).....	8267
30 Condenser (0.05 mfd.).....	Part of 66
31 Condenser (0.03 mfd.).....	30-4025
32 Padder.....	Part of 33
33 1st I. F. Transformer.....	32-1711
34 Padder.....	Part of 33
35 Condenser (0.05 mfd.).....	3615-DG
36 Resistor (10 ohms).....	33-3041
37 Shadow Meter.....	45-2083
38 Padder.....	Part of 39
39 2nd I. F. Transformer.....	32-1830

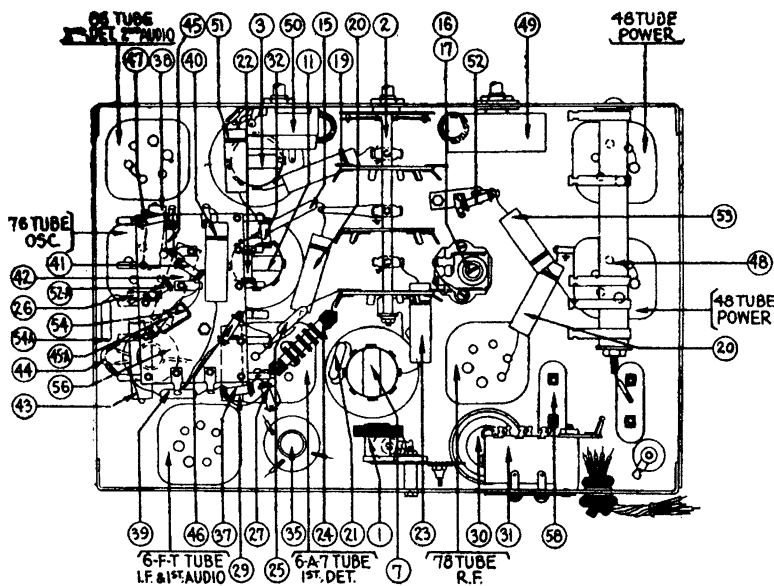
Description	Part No.
40 Padder.....	Part of 39
41 Condenser (110 mmf.).....	30-1031
42 Condenser (110 mmf.).....	8035-DU
43 Resistor (51,000 ohms).....	6098
44 Resistor (330,000 ohms).....	33-1200
45 Condenser (110 mmf.).....	Part of 42
46 Condenser (0.01 mfd.).....	30-4169S
47 Condenser (0.05 mfd.).....	Part of 35
48 Condenser (110 mmf.).....	30-1031
49 Volume Control (1. meg.).....	33-5116
50 Condenser (0.01 mfd.).....	3903-SU
51 Resistor (99,000 ohms).....	6099
52 Condenser (0.05 mfd.).....	3615-SU
53 Resistor (490,000 ohms).....	6097
54 Resistor (99,000 ohms).....	6099
55 Condenser (0.2 mfd.).....	Part of 64
56 Resistor (25,000 ohms).....	4516
57 Condenser (0.75 mfd.).....	Part of 65
58 Resistor (1. meg.).....	33-1096
59 Resistor (490,000 ohms).....	6097
60 Condenser (0.09 mfd.).....	Part of 65
61 Resistor (20,000 ohms).....	33-1178
62 Condenser (0.015 mfd.).....	Part of 64A
63 Condenser (2000 mmf.).....	Part of 64A
64 Condenser (800 mmf.).....	Part of 64A
64A Tone Control.....	30-4333
65 Condenser (0.25 mfd.).....	30-4356
66 Condenser (0.03 mfd.).....	8318-SU
67 Condenser (1.0 mfd.).....	30-4357
68 Resistor (7 ohms).....	B.C. 33-3214
69 Resistor (8.3 ohms).....	
70 Resistor (30 ohms).....	
71 Resistor (7.8 ohms).....	B.C. 33-3214
72 Condenser (0.015 mfd.) Double.....	
73 Choke.....	3793-DU
74 Choke.....	32-7476
75 Input Transformer.....	32-7213
76 Output Transformer (on speaker).....	32-7211
77 Speaker Model K-13 (641-B).....	2550
78 Speaker Model H-10 (641-X).....	32-7211
79 Condenser (.006 mfd.).....	30-4125
Tube Shield Base.....	28-2725
Tube Shield Body.....	28-2726
R. F. Shield.....	38-6938
I. F. Shield.....	38-6808
4-prong Socket.....	27-6042
5-prong Socket.....	27-6035
6-prong Socket.....	27-6036
7-prong Socket.....	27-6037
Speaker Socket.....	27-6043
Bezel.....	28-3164
Bezel Gasket.....	27-8036
Bezel Glass.....	27-8008
Bezel Frame Gasket.....	27-7972
Dial.....	27-5125
Hub and Set Screw Assembly.....	31-1550
Spring Clamp.....	28-2837
Pilot Lamp.....	34-2068
Knob (Station Selector).....	27-4206
Knob (Fine Tuning).....	27-4207
Knob (Volume Control, Tone Control).....	27-4208
Knob (Waveband Switch).....	27-4225

MODEL 642 (32-Volt D.C.)



MODEL 642

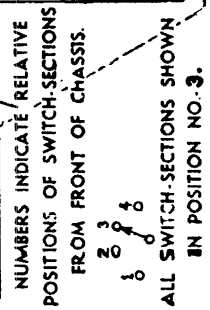
(Replacement Parts)



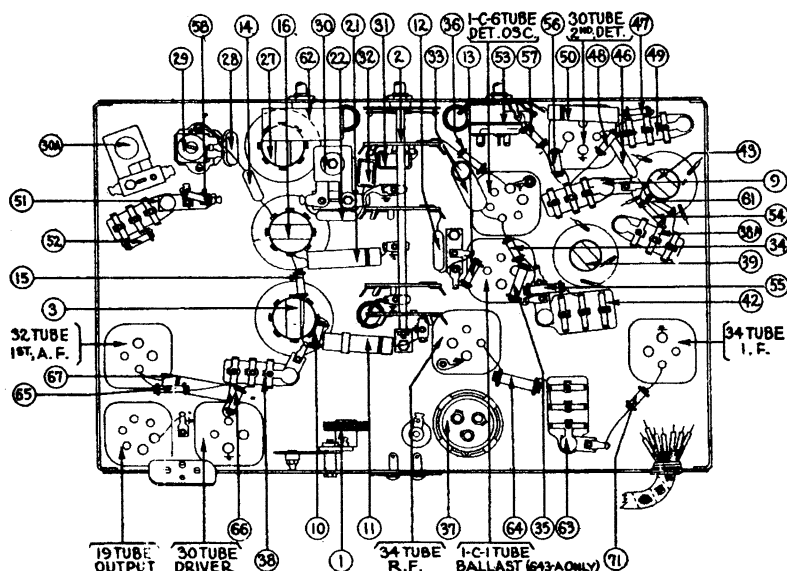
Description	Part No.
1 Wavetrap	38-6972
2 Waveband Switch	42-1107
3 Antenna Transformer	32-1867
4 Compensating Condenser (Std.)	Part of 3
5 Compensating Condenser (Police)	Part of 3
6 Compensating Condenser (S. W.)	Part of 3
7 R. F. Transformer	32-1868
8 Compensating Condenser (Std.)	Part of 7
9 Compensating Condenser (Police)	Part of 7
10 Compensating Condenser (S. W.)	Part of 7
11 Oscillator Transformer	32-1869
12 Compensating Condenser (Std.)	Part of 11
13 Compensating Condenser (Police)	Part of 11
14 Compensating Condenser	Part of 11
15 Condenser (.0047 mf.)	30-1052
16 Compensating Condenser (L. F. Police)	31-6027
17 Compensating Condenser (L. F. Std.)	Part of 16
18 Tuning Condenser	31-1526
19 Condenser (0.05 mf.)	30-4020
20 Condenser (0.05 mf.)	30-4020
21 Condenser (.000050 mf.)	30-1029
22 Resistor (99,000 ohms)	6099
23 Condenser (0.05 mf.)	30-4020
24 Choke (R.F.)	32-1842
25 Condenser (.00015 mf.)	30-1033
26 Resistor (20,000 ohms)	33-1178
27 Resistor (13,000 ohms)	8267
28 Choke (Filter)	32-7215
29 Condenser (0.05 mf.)	30-4020

Description	Part No.
30 Condenser (5.0 mf.)	30-2132
31 Condenser (0.15-0.15 mf.)	6287-DU
32 Resistor (2.0 meg.)	33-1025
33 Condenser (0.05 mf.)	30-4020
34 Compensating Condenser (1st I. F. Pri.)	Part of 35
35 I. F. Transformer (1st)	32-1843
36 Compensating Condenser (1st I. F. Sec.)	Part of 35
37 Resistor (170,000 ohms)	33-1191
38 Condenser (0.02 mf.)	30-4215
39 Condenser (.00011 mf.)	30-1031
40 Condenser (0.02 mf.)	30-4124
41 Resistor (2 meg.)	33-1025
42 Condenser (0.05 mf.)	30-4020
43 Condenser (0.05 mf.)	30-4020
44 Resistor (300 ohms)	33-3010
45 Resistor (1.0 meg.)	33-1096
46 Resistor (1.0 meg.)	33-1096
47 Resistor (1.0 meg.)	33-1096
48 B. C. Resistor	38-7026
49 Tone Control	30-4332
50 Volume Control	33-5120
51 Condenser (0.02 mf.)	30-4215
52 Resistor (25,000 ohms)	33-1013
53 Condenser (0.02 mf.)	30-4215
54 Condenser (.00011 mf.)	30-1031
54A Condenser (.00011 mf.)	30-1031
55 Compensating Condenser (2nd I. F. Pri.)	Part of 56
56 2nd I. F. Transformer	32-1844
57 Compensating Condenser (2nd I. F. Sec.)	Part of 56
58 Input Transformer	3242
59 Output Transformer	32-7309
60 Speaker Cone Assembly	(K-29) 36-3159
Field Coil Assembly	36-3407
5 Prong Socket	27-6035
6 Prong Socket	27-6036
7 Prong Socket	27-6037
R. F. Shield Assembly	38-6938
Tube Shield Body	28-2726
Tube Shield Base	28-2725
Pilot Lamp	34-2068
Dial	27-5098
Hub and Set Screw Assembly	31-1550
Spring Clamp	28-2837
Speaker Cable	L-1885
Bezel	28-3163
Bezel Glass	27-8006
Bezel Gasket	27-7980
Bezel Frame Gasket	27-7971
Knob (Station Selector)	27-4206
Knob (Fine Tuning)	27-4207
Knob (Volume Control, Tone Control)	27-4208
Knob (Wave Band Switch)	27-4225

- RED
- ANTENNA
- GROUND
- BLACK



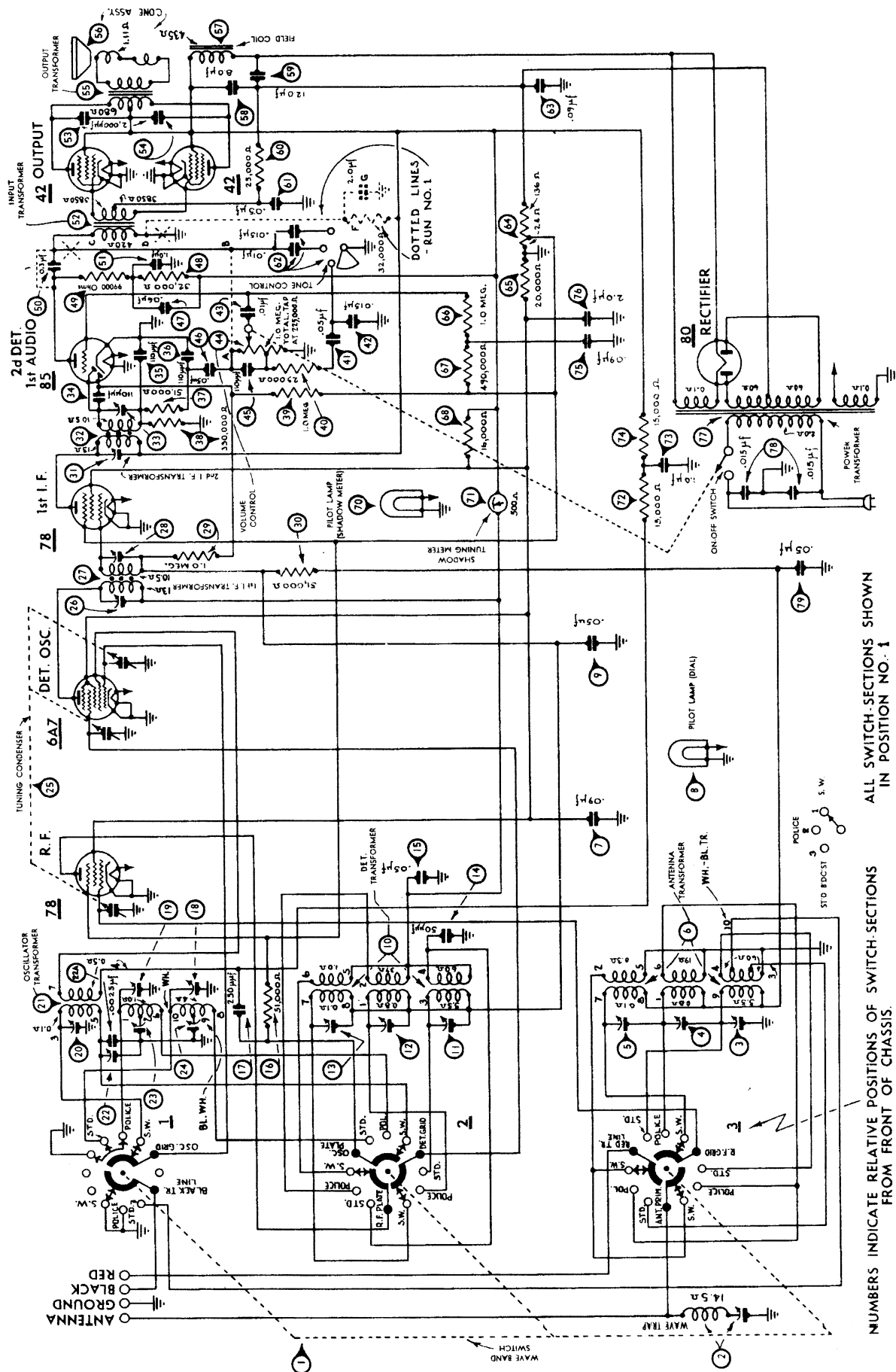
Replacement Parts for Model 643

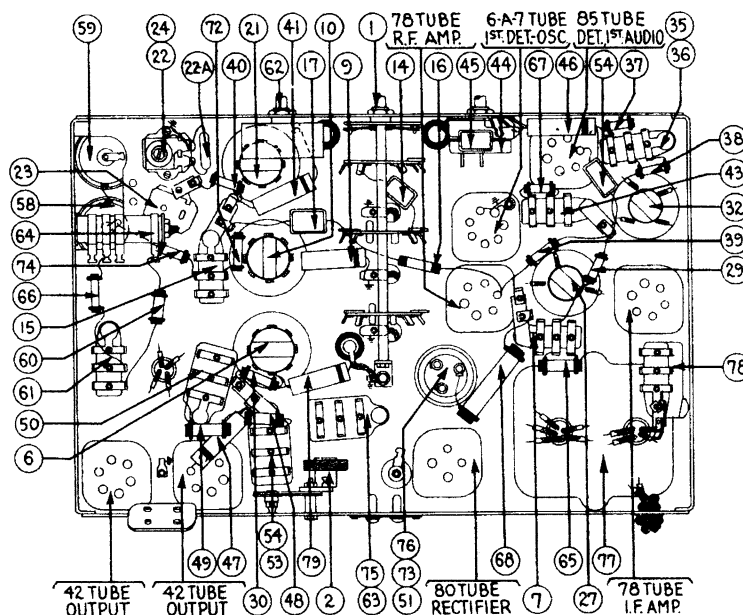


Description	Part No.
1 Wave Trap Assembly	38-6850
2 Wave Band Switch	42-1128
3 Antenna Transformer	32-1806
4 Condenser Gang Assembly	31-1634
5 Padder	Part of 32-1806 3
6 Padder	
7 Padder	
8 Padder	
9 Condenser (.05 mfd.)	3615-SG
10 Resistor (100,000 ohms)	6099
11 Condenser (.05 mfd. tubular)	30-4020
12 Condenser (Mica 1800 mmf.)	6018
13 Resistor (500 ohms)	33-1207
14 Condenser (Mica 110 mmf.)	30-1031
15 Resistor (100,000 ohms)	6099
16 R.F. Transformer	32-1807
17 Padder	Part of 32-1807 18
18 Padder	
19 Padder	
20 Padder	
21 Condenser (Tubular .05 mf.)	30-4020
22 Condenser (Mica 3250 mmf.)	30-1061
23 Padder	Part of 32-1808 27
24 Padder	
25 Padder	
26 Padder	
27 Oscillator Transformer	32-1808
28 Condenser (Mica 600 mmf.)	30-1049
29 Padding Condenser	31-6027
30 Padding Condenser	04000-R
30A Padding Condenser	04000-F
31 Condenser (Mica 15 mmf.)	30-1030
32 Condenser (Mica 15 mmf.)	30-1030
33 Condenser (Tubular .01 mf.)	30-1145

Description	Part No.
34 Resistor (8000 ohms)	5838
35 Resistor (2000 ohms)	6984
36 Resistor (51,000 ohms)	6098
37 Electrolytic Condenser	30-2127
38 Condenser (0.05 mf.)	3615-SG
38A Condenser (.05 mfd.)	3615-SG
39 1st I.F. Transformer	32-1809
40 Padder	Part of 39
41 Padder	
42 Condenser (Twin 0.05 mf.)	3615-DU
43 2nd I.F. Transformer	32-1810
44 Padder	Part of 43
45 Padder	
46 Condenser (Mica 6000 mmf.)	6359
47 Resistor (50,000 ohms)	6098
48 Resistor (.5 meg.)	4410
49 Condenser (Twin 110 mmf.)	30-1031
50 Condenser (.05 mf.)	3615-SU
51 Condenser (.01 mf.)	3903-SU
52 Resistor (1 meg.)	33-1096
53 Volume Control and Switch	33-5119
54 Resistor (2 meg.)	33-1025
55 Resistor (1000 ohms)	33-1028
56 Resistor (1000 ohms)	33-1028
57 Resistor (1000 ohms)	33-1028
58 Resistor (50,000 ohms)	6098
59 Pilot Lamp	5316
60 Condenser (.01 mf.)	3903-SG
61 Resistor (2 meg.)	33-1025
62 Tone Control	30-4352
63 Condenser (0.3 mf.)	6287-DG
64 Resistor (330,000 ohms)	6046
65 Resistor (250,000 ohms)	4410
66 Resistor (500,000 ohms)	6097
67 Condenser (0.01 mf.)	3903-SU
68 Input Transformer	32-7473
69 Output Transformer	32-7472
70 Voice Coil and Cone Assembly (K-7)	36-3159
71 Resistor (1000 ohms)	5837
Battery Cable Assembly	41-3144
Tube Shield Base (2)	28-2725
Tube Shield Base (3)	8004
Tube Shield Body (2)	28-2726
Tube Shield Body (3)	8005
4-prong Tube Socket (5)	27-6044
5-prong Tube Socket (1)	27-6042
6-prong Tube Socket (2)	27-6036
Speaker Socket (1)	27-6043
Dial Scale	27-5124
Knobs (1)	27-4206
Knobs (1)	27-4207
Knobs (2)	27-4208
Knobs (1)	27-4219
Bezel	28-2933
Bezel Glass	27-8009
Bezel Frame Gasket	27-7972
Chassis Mounting Screw	W-1496-H
Chassis Mounting Washer	27-4021
Chassis Mounting Cushion	27-4202
"A" Battery	172R
"B" and "C" Battery	P9068

MODEL 645



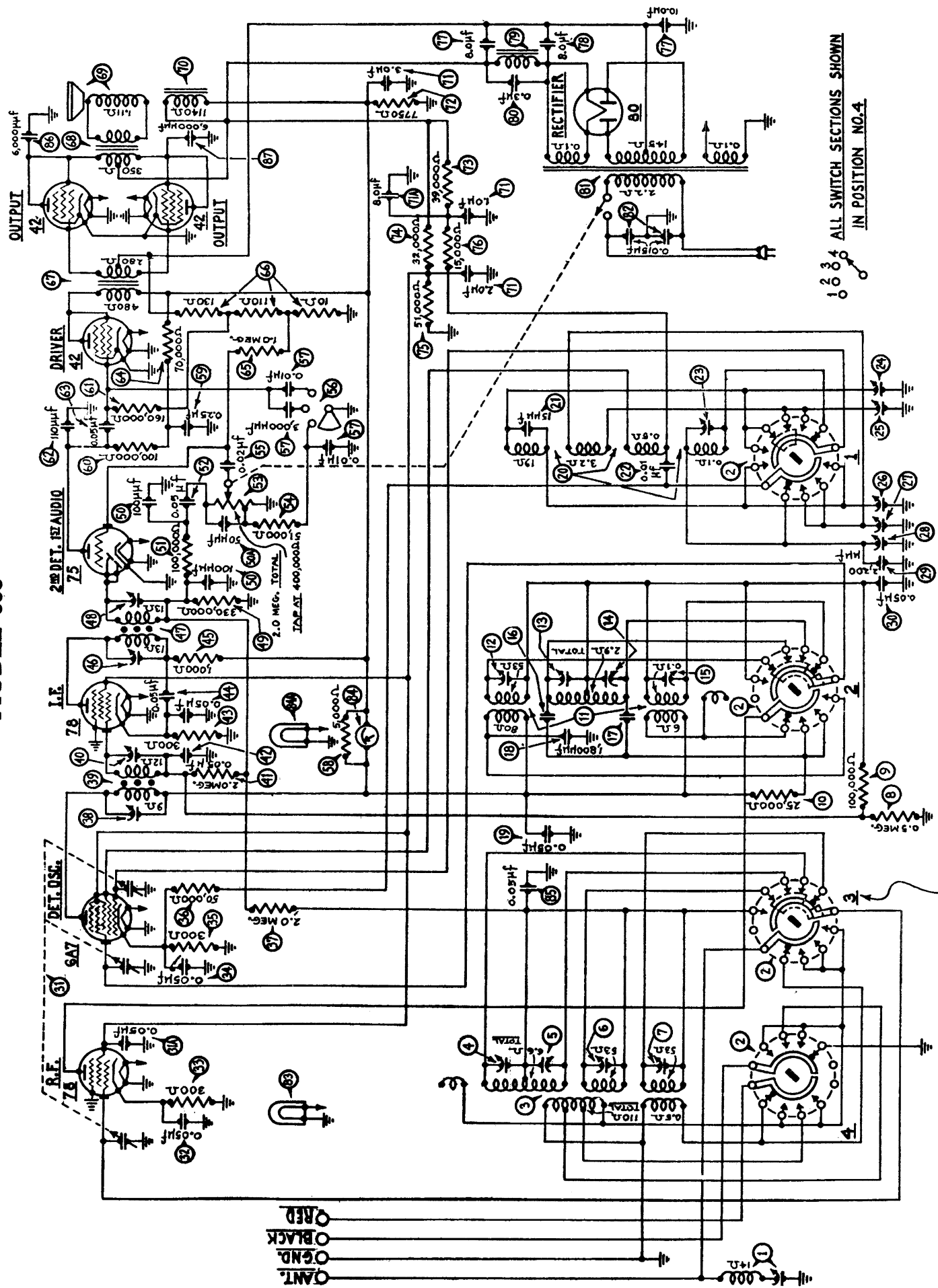


Model 645

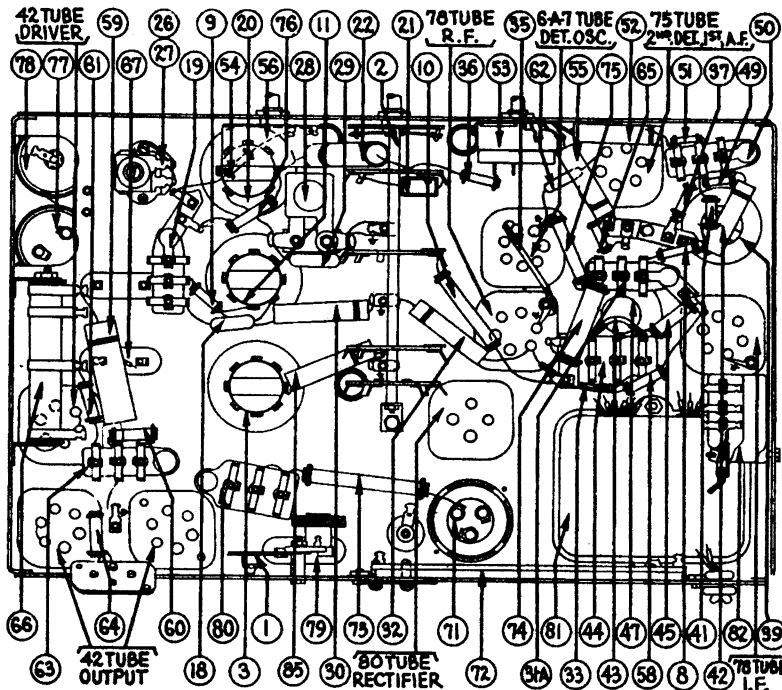
Schematic Number	Part and Description	Part No.
①	Wave Band Switch	42-1153
②	Wave Trap	38-6850
③	Compensator (Ant. Standard)	31-6058
④	Compensator (Ant. Police)	
⑤	Compensator (Ant. Short-Wave)	
⑥	Ant. Transformer	32-1867
⑦	Condenser (.09 mf. Bakelite)	4989-SG
⑧	Pilot Lamp (Dial)	34-2039
⑨	Condenser (.05 mf. Tubular)	30-4020
⑩	Det. Transformer	32-1868
⑪	Compensator (Det. Standard)	31-6063
⑫	Compensator (Det. Police)	
⑬	Compensator (Det. Short-Wave)	
⑭	Condenser (.50 mf.)	30-1029
⑮	Condenser (.05 Bakelite)	3615-SG
⑯	Resistor (51,000 ohms, 1/4 watt)	33-351143
⑰	Condenser (.00025 mf. Mica)	30-1056
⑱	Compensator (Osc. Standard)	31-6058
⑲	Compensator (Osc. Police)	
⑳	Compensator (Osc. Short-Wave)	
㉑	Osc. Transformer	32-1976
㉒	Compensator (Short-Wave Series)	31-6027
㉓	Condenser (.0025 mf. Mica)	7006
㉔	Compensator (Police Series)	31-6073
㉕	Compensator (Standard Series)	Part of ㉔
㉖	Tuning Condenser Assy.	31-1555
㉗	Compensator (1st I.F. Pri.)	31-6053
㉘	1st I.F. Transformer	32-1917
㉙	Compensator (1st I.F. Sec.)	Part of ㉘
㉚	Resistor (1.0 Meg., 1/4 watt)	33-510143
㉛	Resistor (51,000 ohm, 1/4 watt)	33-351143
㉜	Compensator (2nd I.F. Pri.)	31-6053
㉝	2nd I.F. Transformer	32-1836
㉞	Compensator (2nd I.F. Sec.)	Part of ㉝
㉟	Condenser (.00011 mf. Mica)	30-1031
㊱	Condenser (.00011 mf. Twin Bakelite)	8035-DG
㊲	Condenser (.00011 mf.)	Part of ㊱
㊳	Resistor (51,000 ohm, 1/4 watt)	33-351143
㊴	Resistor (330,000 ohm, 1/4 watt)	33-433133
㊵	Resistor (1.0 Meg., 1/4 watt)	33-510143
㊶	Resistor (25,000 ohm, 1/4 watt)	33-325243
㊷	Condenser (.05 mf. Tubular)	30-4020
㊸	Condenser (.015 mf.)	Part of ㊷
㊹	Condenser (.01 mf. Bakelite)	3903-ST
㊺	Volume Control (1.0 Meg. ohm)	33-5113
㊻	Condenser (.00011 mf. Mica)	30-1031
㊼	Condenser (.05 mf. Tubular)	30-4020
㊽	Condenser (.06 mf. Tubular)	30-4123
㊾	Resistor (32,000 ohm, 1/2 watt)	33-332333
㊿	Resistor (99,000 ohm, 1/2 watt)	33-399143
1	Resistor (.3 mf. Twin Bakelite)	6287-DI
2	Elec. Condenser (1.0 mf., 1.0 mf., 2.0 mf.)	30-2080
3	Audio Input Transformer	32-7532
4	Condenser (.002 mf. Twin Bakelite)	7296-DI
5	Condenser (.002 mf.)	Part of 4
6	Output Transformer	2585
7	Voice Coil Cone Assy. (B. G. K31)	36-3159
8	Field Coil Assy. (B. G. K. 31)	36-3463
9	Electrolytic Condenser (8. mf.)	30-2025
10	Electrolytic Condenser (12 mf.)	30-2117
11	Resistor (25,000 ohm, 1/4 watt)	33-325243
12	Condenser (.05 mf. Bakelite)	3615-SG

Schematic Number	Part and Description	Part No.
13	Program Control	30-4406
14	Condenser (.09 mf. Twin Bakelite)	4989-DG
15	B.C. Resistor (136 ohm, 24 ohm)	33-3236
16	Resistor (20,000 ohm, 1 watt)	33-320433
17	Resistor (490,000 ohm, 1/4 watt)	33-449143
18	Resistor (1.0 meg. ohm, 1/4 watt)	33-510143
19	Resistor (16,000 ohm, 3 watt)	33-316633
20	Pilot Lamp (Shadow Meter)	34-2064
21	Shadow Meter	45-2083
22	Resistor (15,000 ohm, 1/4 watt)	33-315133
23	Electrolytic Condenser (1.0 mf.)	Part of 23
24	Resistor (15,000 ohm, 1/4 watt)	33-315133
25	Condenser (.09 mf.)	Part of 25
26	Electrolytic Condenser (2.0 mf.)	Part of 26
27	Power Transformer (110 V., 60 cycle)	3793-DG
28	Condenser (.015 mf. Twin Bakelite)	30-4020
29	Condenser (.05 mf. Tubular)	32-7407
30	Power Transformer (115 V., 25 cycle)	32-7404
31	Power Transformer (220 V., 50-60 cycle)	27-6044
32	4-prong Socket	27-6036
33	6-prong Socket	27-6037
34	7-prong Socket	27-6043
35	Speaker Socket	38-6921
36	R.F. Transformer Shield	38-6808
37	I.F. Transformer Shield	28-2725
38	Tube Shield Base	28-2726
39	Tube Shield Body	28-2917
40	Shadow Meter Light Shield	6440
41	Electrolytic Condenser (Clamp)	27-7194
42	Electrolytic Condenser Insulator	25-5165
43	Dial Scale	31-1724
44	Dial Hub Assy.	29-3061
45	Screen Bracket Assy.	27-8140
46	Scale Guard	27-5160
47	Glowing Arrow Mask	27-5159
48	Glowing Arrow Screen	29-3274
49	Mask Arm	29-3338
50	Link	29-3339
51	Coupling	29-2959
52	Sub. Base Mtg. Foot	W-1496-A
53	Chassis Mtg. Screw	27-4201
54	Chassis Mtg. Washer (Rubber)	27-4202
55	Chassis Mtg. Cushion (Rubber)	27-4206
56	Knob (Tuning)	27-4207
57	Knob (Slow Speed Tuning)	27-4208
58	Knob (Volume, Tone)	27-4225
59	Knob (Wave Band)	28-3164
60	Bezel Mounting Screw	W-1494
61	Bezel Glass	27-8113
62	Bezel Glass Gasket	27-8036
63	Shadow Screen	27-5120
64	Speaker Cable	02722
65	Bottom Shield	38-7189
66	Mask	28-3433
67	Pilot Lamp Bracket Assy.	38-6789
68	Front Bumper	27-4200
69	Speaker Mtg. Bolt	29-3128
70	Speaker Mtg. Nut	W-124-A
71	*Voice Coil Cone Assy. (Furn. H-21)	02625
72	Field Coil Assy. (Furn. H-21)	36-3461
73	G. Elec. Condenser (2.0 mf.)	Part of 30-2080
74	F. Resistor (32,000 ohm)	3525

MODEL 650



Replacement Parts—Model 650



Description	Part No.
1 Wave Trap.....	38-6850
2 Waveband Switch.....	42-1114
3 Antenna Transformer.....	32-1708
4 Compensating Condenser (Ant.) (Police).....	Part of 8
5 Compensating Condenser (Ant.) (Standard).....	Part of 8
6 Compensating Condenser (Ant.) (Longwave).....	Part of 8
7 Compensating Condenser (Ant.) (Shortwave).....	Part of 8
8 Resistor (.5 meg.) (Yellow-White-Yellow).....	6097
9 Resistor (100000 ohms) (White-White-Yellow).....	6099
10 Resistor (25000 ohms) (Red-Green-Yellow).....	3656
11 R.F. Transformer.....	32-1709
12 Compensating Condenser (R.F. Longwave).....	Part of 11
13 Compensating Condenser (R.F. Broadcast).....	Part of 11
14 Compensating Condenser (R.F. Police).....	Part of 11
15 Compensating Condenser (R.F. Shortwave).....	Part of 11
16 Condenser.....	Part of 11
17 Condenser.....	Part of 11
18 Condenser (.0018 Mfd. Mica).....	6018
19 Condenser (.05 Mfd. Bakelite Block).....	3615-SG
20 Oscillator Transformer.....	32-1710
21 Condenser (.000015 Mfd. Mica).....	30-1030
22 Condenser (.01 Mfd. Tubular).....	*30-4145
23 Compensating Condenser (Osc. S.W.).....	Part of 22
24 Compensating Condenser (Osc. Longwave).....	Part of 22
25 Compensating Condenser (Osc. B.C. & Police).....	Part of 22
26 Compensating Condenser (Osc. L.W. Series) Part of	31-6044
27 Compensating Condenser (Osc. B.C. Series) Part of	31-6044
28 Compensating Condenser (Osc. S.W. Series).....	04000-R
29 Condenser (.0022 Mfd. Mica).....	30-1057
30 Condenser (.05 Mfd. Tubular).....	30-4020
31 Tuning Condenser Assembly.....	31-1555
31a Condenser (.05 Mfd. Bakelite Block).....	3615-SG
32 Condenser (.05 Mfd. Tubular).....	30-4020
33 Resistor (300 ohms) (Orange-Black-Black).....	33-3010
34 Condenser (.05 Mfd. Tubular) (On top of chassis).....	30-4327
35 Resistor (300 ohms Flexible) (Orange-Black-Black).....	33-3010
36 Resistor (50000 ohms) (Green-Brown-Orange).....	6098
37 Resistor (2 Megs.) (Red-Black-Green).....	33-1025
38 Compensating Condenser (1st I.F. Primary).....	Part of 39
39 1st I.F. Transformer.....	32-1833
40 Compensating Condenser (1st I.F. Secondary).....	Part of 39

Description	Part No.
41 Resistor (2 Megs.) (Red-Black-Green).....	33-1025
42 Condenser (.05 Mfd. Tubular).....	30-4020
43 Resistor (300 ohms Flexible) (Orange-Black-Black).....	33-3010
44 Condenser (.05 Mfd. Twin Bakelite Block).....	3615-DU
45 Resistor (1000 ohms) (Brown-Black-Red).....	5837
46 Compensating Condenser (2d I.F. Primary).....	Part of 47
47 2d I.F. Transformer.....	32-1836
48 Compensating Condenser (2d I.F. Secondary).....	Part of 47
49 Resistor (330000 ohms) (Orange-Orange-Yellow).....	33-1200
50 Condenser (.00011 Mfd. Twin Bakelite Block).....	8035-DG
50a Condenser (.00005 Mfd. Mica) (Not shown Fig. 3).....	30-1029
51 Resistor (100000 ohms) (White-White-Orange).....	6099
52 Condenser (.05 Mfd. Tubular).....	30-4020
53 Volume Control and On-Off Switch.....	33-5108
54 Resistor (51000 ohms) (Green-Brown-Orange).....	6098
55 Condenser (.02 Mfd. Tubular).....	30-4113
56 Tone Control.....	30-4343
57 Condensers in Tone Control.....	Part of 56
58 Resistor (5000 ohms) (Green-Black-Red).....	5310
59 Condenser (.25 Mfd. Tubular).....	30-4134
60 Resistor (100000 ohms) (White-White-Orange).....	6099
61 Resistor (160000 ohms) (Brown-Blue-Yellow).....	33-1191
62 Condenser (.00011 Mfd. Mica).....	30-1031
63 Condenser (.05 Mfd. Bakelite Block).....	3615-SU
64 Resistor (70000 ohms) (Violet-Black-Orange).....	5385
65 Resistor (1 Meg.) (Brown-Black-Green).....	33-1096
66 B.C. Resistor (Wirewound) (10 ohms, 110 ohms, 130 ohms).....	33-3137
67 Input Transformer.....	32-7114
68 Output Transformer.....	32-7078
69 Cone and Voice Coil Assembly (H-13).....	02623
70 Cone and Voice Coil Assembly (K-17).....	02996
71 Field Coil and Pot Assembly (H-13 or K-17).....	36-3104
72 Condenser (Electrolytic—3 Mfd., 1 Mfd., 2 Mfd.).....	30-2122
73 Resistor (Wirewound) (7750 ohms).....	33-3211
74 Resistor (39000 ohms) (Orange-White-Orange).....	33-1027
75 Resistor (32000 ohms) (Orange-Red-Orange).....	33-1026
76 Resistor (51000 ohms) (Green-Brown-Orange).....	4237
77 Resistor (15000 ohms) (Brown-Green-Orange).....	6208
78 Condenser (Electrolytic—8 Mfd., 10 Mfd.).....	30-2045
79 Condenser (Electrolytic—8 Mfd.).....	30-2025
80 Filter Choke.....	32-7115
81 Condenser (.3 Mfd. Bakelite Block).....	*6287-DU
82 Power Transformer.....	110 Volts 60 Cycles..... 32-7402 110 Volts 25 Cycles..... 32-7403 230 Volts 50 Cycles..... 32-7404
83 Condenser (.015 Mfd. Twin Bakelite Block).....	3793-DG
84 Pilot Lamp (Dial).....	34-2064
85 Shadow Tuning Meter.....	**45-2086
85a Pilot Lamp (Shadowmeter).....	Part of 85
86 Condenser (.05 Mfd. Tubular).....	30-4020
87 Condenser (.006 Mfd. Tubular).....	30-4125
88 Condenser (.006 Mfd. Tubular).....	30-4125
89 Dial Scale.....	27-5103
90 Dial Hub and Set Screw Assembly.....	31-1550
91 Dial Spring Clamp.....	28-2837
92 Tube Shield.....	28-2726
93 Tube Shield Base.....	28-2725
94 Socket (4-Prong).....	27-6034
95 Socket (6-Prong).....	27-6036
96 Socket (7-Prong).....	27-6037
97 Socket (Speaker Plug).....	27-6033
98 Knob (Station Selector).....	27-4206
99 Knob (Fine Tuning).....	27-4207
100 Knob (Waveband).....	27-4219
101 Knob (Volume Control or Tone Control).....	27-4208
102 Bezel.....	28-2933
103 Glass.....	27-7931
104 Chassis Mtg. Screw.....	W-1495
105 Chassis Mtg. Washer.....	27-4198
106 Chassis Mtg. Rubber Bumper.....	27-4197

▲ Omitted after Run 5.

*In Model 650A (115 Volts 25 Cycles) this is part No. 04357.

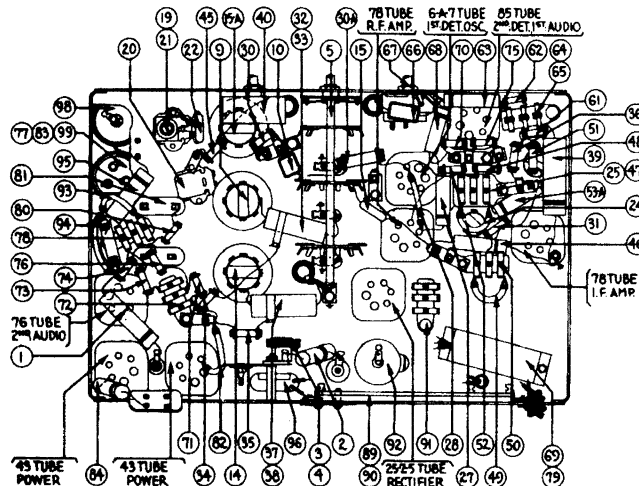
†In Code 122 (650X, 650MX, 650H) this is part No. 30-2014.

**In Code 122 (650X, 650MX, 650H) this is part No. 45-2082

* After Run 2, this is 30-1032 mica, List .35.

[illegible]

ALL SWITCH-SECTIONS SHOWN IN POSITION NO.-1

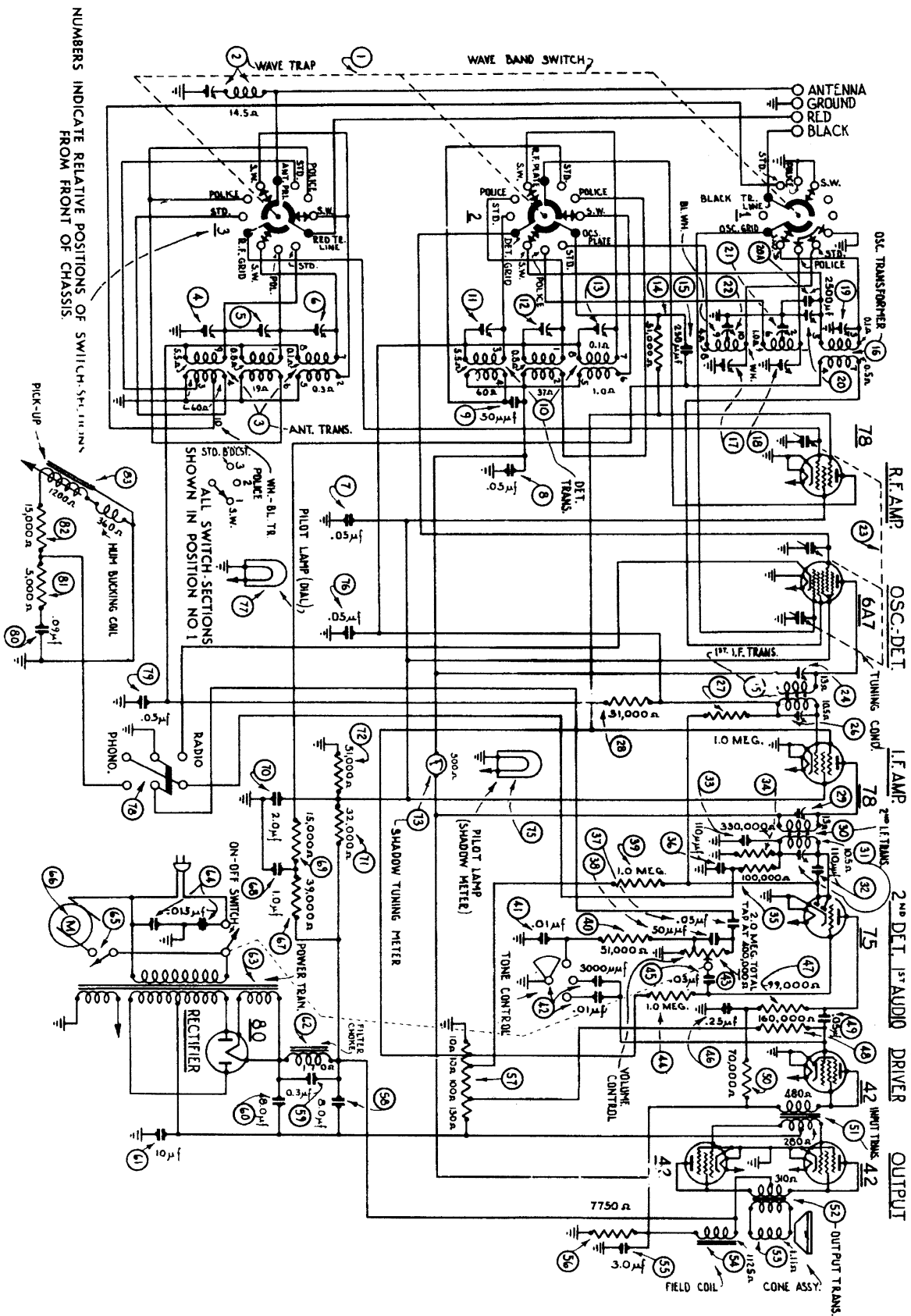


Model 651

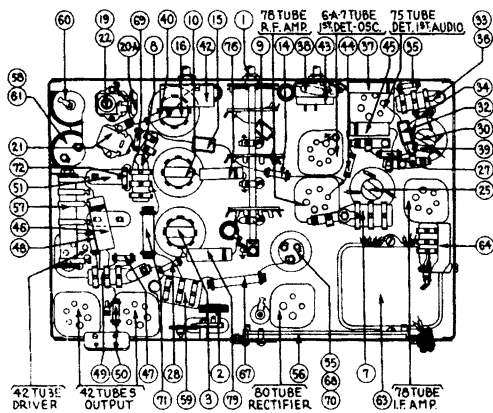
Schematic Number	Part and Description	Part No.
①	Condenser (.05 mf. Tubular)	30-4020
②	Condenser (.002 mf.) Tubular	30-4177
③	Wave Trap	38-6972
④	Compensating Cond.	Part of ③
⑤	Wave Band Switch	42-1151
⑥	Compensating Condenser (Ant. S. Wave)	31-6058
⑦	Compensating Condenser (Ant. Police)	
⑧	Compensating Condenser (Ant. Std.)	
⑨	Aerial Transformer	32-1867
⑩	Condenser (.00025 mf. Mica)	30-1032
⑪	Compensating Condenser (Det. Std.)	31-6063
⑫	Compensating Condenser (Det. Pol.)	
⑬	Compensating Condenser (Det. S. Wave)	
⑭	Det. Transformer	32-1868
⑮	Condenser (mica .00005 mf.)	30-1029
⑯	Oscillator Transformer	32-1976
⑰	Compensating Condenser (Osc. Std.)	31-6058
⑱	Compensating Condenser (Osc. Pol.)	
⑲	Compensating Condenser (Osc. S. Wave)	
⑳	Compensating Condenser (Series Std.) (Screw)	31-6027
㉑	Compensating Condenser (Series Pol.)	31-6073
㉒	Compensating Condenser (Series S. Wave) (Nut)	Part of ㉑
㉓	Condenser (mica .0025 mf.)	7006
㉔	Tuning Condenser Assy.	31-1555
㉕	Resistor (200 ohms wire wound)	33-3120
㉖	Condenser (.09 mf. twin bakelite)	4989-DU
㉗	Condenser (1 MMf., wires twisted)	30-4020
㉘	Condenser (.05 mf. tubular)	
㉙	Resistor (300 ohm, wire wound)	
㉚	Resistor (13,000 ohms)	8267
㉛	Resistor (5,000 ohms)	33-250123
㉜	Resistor (120,000 ohms)	33-412334
㉝	Resistor (99,000 ohms)	33-399344
㉞	Condenser (.05 mf. twin tubular)	30-4394
㉟	Condenser (.05 mf.)	Part of ㉞
㊱	Resistor (1000 ohms)	33-210133
㊲	Resistor (1000 ohms)	33-210133
㊳	Resistor (2 meg.)	33-520143
㊴	Condenser (.05 mf. twin tubular)	30-4394
㊵	Condenser (.05 mf. bakelite)	Part of ㊴
㊶	Condenser (.25 mf. tubular)	30-4146
㊷	Tone Control	30-4382
㊸	Condenser (.015 mf.)	Part of ㊸
㊹	Condenser (.0007 mf.)	
㊺	Condenser (.0012 mf.)	
㊻	Shadow Meter	45-2083
㊼	Resistor (70,000 ohms, 1/4 watt)	33-370133
㊽	Condenser (.05 mf. tubular)	30-4020
㊾	Condenser (.09 mf.)	Part of ㊽
㊿	Resistor (51,000 ohms)	33-351143
1	Resistor (700 ohms, wire wound)	33-3124
2	Condenser (.05 mf. bakelite)	3615-OSU
3	Resistor (2 meg.)	33-520143
4	Resistor (10,000 ohms)	33-310133
5	Condenser (.05 mf. tubular)	30-4020
6	Compensating Condenser (1st I.F. Pri.)	Part of 5
7	1st I.F. Transformer	32-1835
8	Compensating Condenser (1st I.F. Sec.)	Part of 7
9	Compensating Condenser (2nd I.F. Pri.)	Part of 7
10	2nd I.F. Transformer	32-1978
11	Compensating Condenser (2nd I.F. Sec.)	Part of 10
12	Resistor (330,000 ohms)	33-433133
13	Resistor (51,000 ohms)	33-351143
14	Condenser (.01 mf. tubular)	30-4169
15	Condenser (.0001 mf. twin bakelite)	8035-ODU

Schematic Number	Part and Description	Part No.
16	Condenser (.0001 mf.)	Part of 16
17	Condenser (mica .00011 mf.)	30-1031
18	Volume Control	33-5116
19	Condenser (.01 mf. tubular)	30-4169
20	Condenser (4—.75 mf. metal can)	30-4405
21	Resistor (1 meg.)	33-510143
22	Resistor (99,000 ohms)	33-399344
23	Condenser (.05 mf. bakelite)	3615-SU
24	Resistor (490,000 ohms)	33-449344
25	Resistor (99,000 ohms)	33-399344
26	Resistor (490,000 ohms)	33-449344
27	Resistor (25,000 ohms)	33-325143
28	Condenser (4—10—10 mf.) (electrolytic)	30-2147
29	Condenser (.05 mf. bakelite)	3615-SU
30	Condenser (.75 mf.)	Part of 30
31	Resistor (20,000 ohms)	33-320133
32	Input Transformer	32-7211
33	Resistor (250 ohms, wire wound)	33-3046
34	Condenser (10 mf.)	Part of 34
35	Condenser (.006 mf. tubular)	30-4024
36	Output Transformer	32-7508
37	Cone & Voice Coil Assy. (651-B)	36-3540*
38	Pilot Lamp, 6.3 volt (Dial)	34-2068
39	Pilot Lamp, 6.3 volt (Shadow Meter)	34-2068
40	Resistor (700 ohms, wire wound)	33-3231
41	Resistor (28 ohms)	Part of 41
42	Condenser (.05 mf. bakelite)	3615-SU
43	Condenser electrolytic (16 mf.)	30-2124
44	Resistor (20 ohms, wire wound)	33-3043
45	Resistor (50 ohms, wire wound)	33-3044
46	Condenser (.09 mf. tubular)	30-4170
47	Choke (Filter)	32-7527
48	Choke (Filter)	32-7528
49	Electrolytic Condenser (16 mf.)	30-2124
50	Electrolytic Condenser (10 mf.) yellow terminal	Part of 50
51	R.F. Shield Assy.	38-6938
52	I.F. Shield Assy.	38-6808
53	Tube Shield	28-2726
54	Tube Shield Base	28-2725
55	5 Prong Socket	27-6035
56	6 Prong Socket	27-6036
57	7 Prong Socket	27-6037
58	Speaker Plug Socket	27-6043
59	Screen Bracket Assy.	31-1749
60	Screen	27-5159
61	Mask	27-5160
62	Mask Arm	29-3274
63	Shaft Coupling	29-3339
64	Dial Scale	27-5170
65	Hub Assembly	31-1724
66	Knob (Tuning)	27-4206
67	Knob (Vernier)	27-4207
68	Knob (Volume)	27-4208
69	Knob (Tone Control)	27-4291
70	Knob (Wave Switch)	27-4225
71	Bezel	28-3164
72	Bezel Glass	27-8113
73	Bezel Mounting Screws	W-1494
74	Speaker Cable	36-3009
75	Chassis Mounting Bolt	W-1496-A
76	Chassis Mounting Washer (Rubber)	27-4201
77	Chassis Mounting Washer (Cushion)	27-4202
78	Elec. Condenser Clamp	6440
79	*Cone Assy. for Cabinet Models	36-3557

MODEL 655



Model 655



Schematic Number	Part and Description	Part No.
①	Wave Band Switch.....	42-1153
②	Wave Trap.....	38-6850
③	Ant. Transformer.....	32-1867
④	Compensator (Standard) (Ant.).....	31-6058
⑤	Compensator (Police) (Ant.).....	
⑥	Compensator (Short-Wave) (Ant.).....	
⑦	Condenser (.05 mf. Bakelite).....	
⑧	Condenser (.05 mf. Bakelite).....	3615-SC†
⑨	Condenser (50 mmf. Mica).....	3615-SC†
⑩	Det. Transformer.....	30-1029
⑪	Compensator (Standard) (Det.).....	32-1868
⑫	Compensator (Police) (Det.).....	31-6063
⑬	Compensator (Short-Wave) (Det.).....	
⑭	Resistor (51,000 ohm, ¼ watt).....	
⑮	Condenser (.00025 mf. Mica).....	
⑯	Osc. Transformer.....	30-1032
⑰	Compensator (Standard) (Osc.).....	32-1976
⑱	Compensator (Police) (Osc.).....	31-6058
⑲	Compensator (Short-Wave) (Osc.).....	
⑳	Compensator (Std. Series) (Osc.).....	
㉑	Condenser (.0025 Mica).....	
㉒	Compensator (Police Series) (Osc.).....	7006
㉓	Compensator (Short-Wave Series) (Osc.).....	31-6073
㉔	Tuning Condenser.....	Part of ㉔
㉕	Compensator (1st I.F. Pri.).....	31-1555
㉖	1st I.F. Transformer.....	31-6053
㉗	Compensator (1st I.F. Sec.).....	32-1917
㉘	Resistor (1.0 meg., ¼ watt).....	Part of ㉘
㉙	Resistor (51,000 ohm, ¼ watt).....	33-510143
㉚	Compensator (2nd I.F. Pri.).....	33-351143
㉛	2nd I.F. Transformer.....	31-6053
㉜	Compensator (2nd I.F. Sec.).....	32-1836
㉝	Condenser (.00011 mf. Mica).....	Part of ㉝
㉞	Condenser (.00011 mf. Twin Bakelite).....	30-1030
㉟	Resistor (330,000 ohm, ¼ watt).....	8035-IDG‡
㊱	Resistor (99,000 ohm, ¼ watt).....	33-433133
㊲	Condenser (.00011 mf.).....	33-399143
㊳	Condenser (.05 mf. Tubular).....	Part of ㊳
㊴	Condenser (50 mmf. mica).....	30-4020
㊵	Resistor (1.0 megohm, ¼ watt).....	30-1029
㊶	Resistor (51,000 ohm, ¼ watt).....	33-510143
㊷	Condenser (.01 mf.).....	33-351143
㊸	Program Control.....	Part of ㊸
㊹	Volume Control.....	30-4378†
㊺	Resistor (1.0 megohm, ¼ watt).....	33-5108
㊻	Condenser (.03 mf. Tubular).....	33-510143
㊼	Condenser (.25 mf. Tubular).....	30-4025
㊽	Resistor (99,000 ohm, ¼ watt).....	30-4134
㊾	Resistor (160,000 ohm, ¼ watt).....	33-399143
㊿	Condenser (.05 mf. Bakelite).....	33-416133
1	Resistor (70,000 ohm, ¼ watt).....	3615-SC†
2	Input Transformer.....	33-370133
3	Output Transformer.....	32-7114
4	Voice Coil & Cone Assy. (B.G. K-17).....	32-7078
5	Field Coil Assy. (B.G. K-17).....	*36-3159
6	Electrolytic Condenser (3.0-1.0-2.0 mf.).....	†36-3104
7	B. C. Resistor (7750 ohm).....	30-2122
8	B. C. Resistor (10-10-100-130 ohm).....	33-3211
9	Electrolytic Condenser (8.0-10.0 mf.).....	33-3226
10	Condenser (.3 mf. Bakelite).....	30-2045
11	Electrolytic Condenser (8.0 mf.).....	6287-DU†
12	Electrolytic Condenser (10 mf.).....	30-2025*
13	Filter Choke.....	Part of 13
14		32-7115

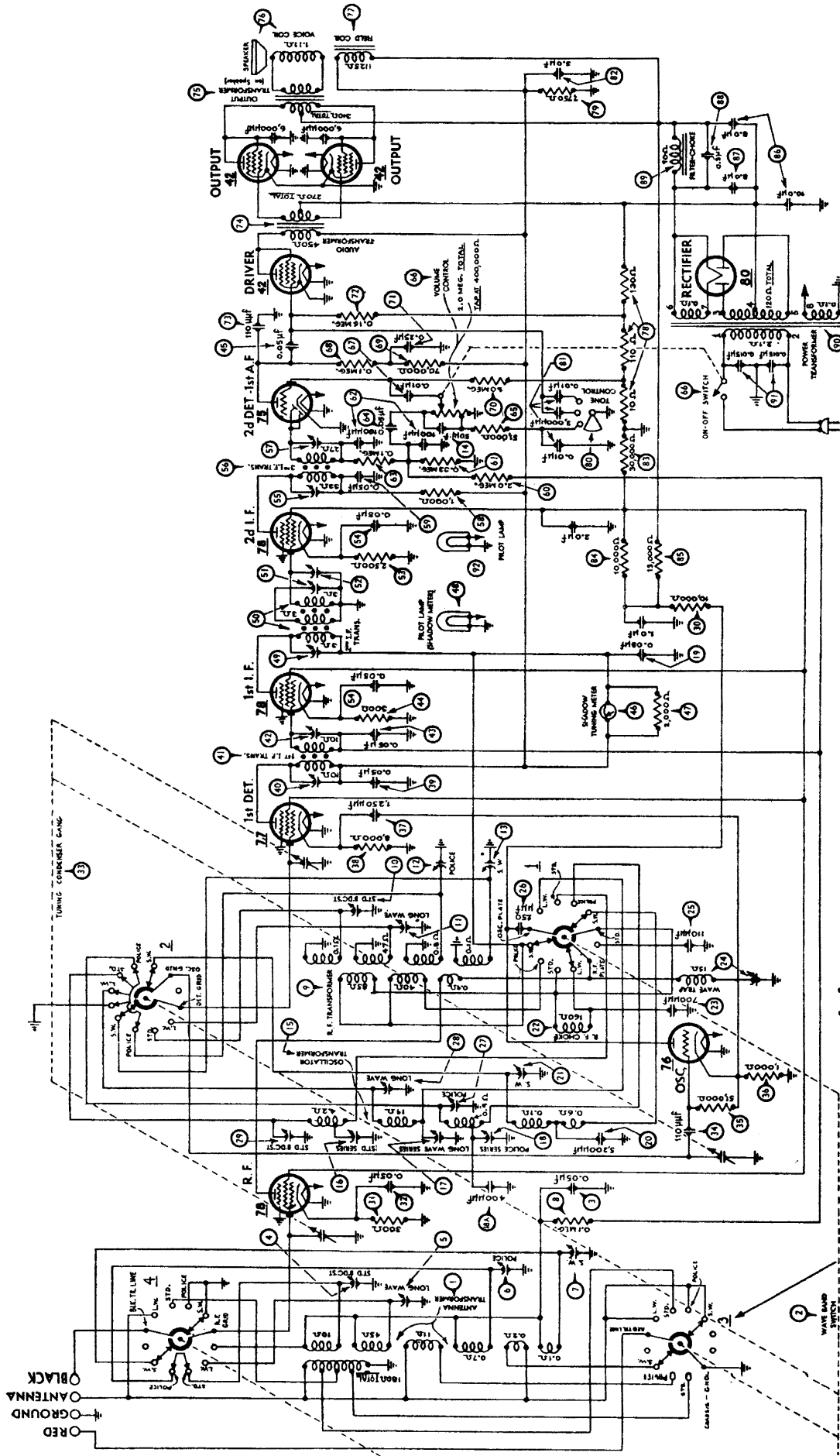
*Code 122-30 2014

†Code 122-39-4379

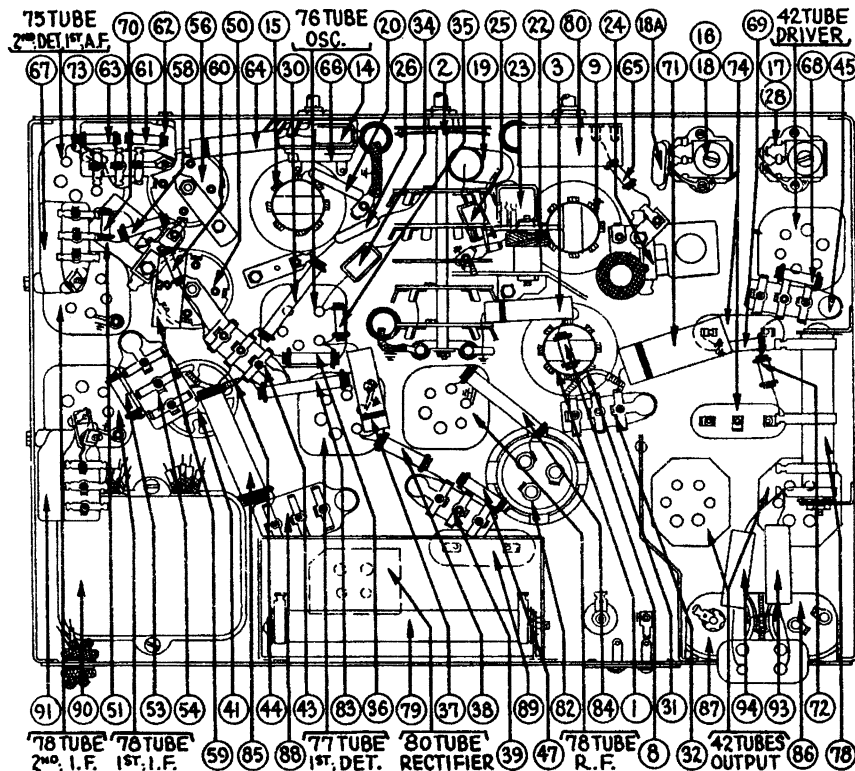
Schematic Number	Part and Description	Part No.
15	Power Transformer (115 V., 60 cycle).....	32-7402
16	Condenser (.015 Twin Bakelite).....	3793-DG†
17	Phono-motor switch assy.....	6345
18	Phono-motor (115 V., 60 cycle).....	35-1002
19	Resistor (39,000 ohm, 1 watt).....	33-339443
20	Electrolytic Condenser (1.0 mf.).....	Part of 20
21	Resistor (15,000 ohm, ¼ watt).....	33-315133
22	Electrolytic Condenser (2.0 mf.).....	Part of 22
23	Resistor (32,000 ohm, 2 watt).....	33-332533
24	Resistor (51,000 ohm, ¼ watt).....	33-351343
25	Shadow Tuning Meter.....	45-2083
26	Pilot lamp (shadow meter).....	34-2064
27	Condenser (.05 mf. Tubular).....	30-4020
28	Pilot lamp (dial).....	34-2039
29	Phono-radio switch assy.....	35-3014
30	Condenser (.05 mf. Tubular).....	30-4020
31	Condenser (.09 mf. Bakelite).....	4989-SU†
32	Resistor (5,000 ohm).....	33-250123
33	Resistor (15,000 ohm).....	33-315133
34	Pickup head.....	35-2014
35	Pickup arm.....	35-2010
36	Phono-motor (115 V., 50 cycle).....	35-1007
37	Phono-motor (115 V., 40 cycle).....	35-1003
38	Phono-motor (115 V., 25 cycle).....	35-1008
39	Phono-motor (230 V., 60 cycle).....	35-1004
40	Phono-motor (230 V., 50 cycle).....	35-1009
41	Phono-motor (230 V., 40 cycle).....	35-1005
42	Phono-motor (230 V., 25 cycle).....	35-1006
43	Hum Bucking coil.....	32-1940
44	Radio-phonograph switch plate.....	28-2250
45	Switch Pointer.....	4277
46	Needle Cup.....	28-2222
47	Needle Cup Cover.....	28-2223
48	Speed Change lever.....	28-1648
49	Speed Change lever spring.....	28-1649
50	Speed Change lever spacer.....	28-6103
51	Speed Change lever washer.....	5577
52	Turntable.....	35-3001
53	Motor Board.....	25869
54	Motor Board mtg. washer.....	27-4199
55	Motor Board mtg. washer.....	28-2089
56	Motor Board mtg. washer.....	W-464-A
57	Motor Board mtg. screw.....	W-461-B
58	Motor Board mtg. nut.....	W-149-A
59	Motor Connector plug.....	4091
60	Shadow Meter light shield.....	28-2917
61	Glowing arrow screen.....	27-5159
62	Glowing arrow mask.....	27-5160
63	Scale guard.....	27-8140
64	Screen bracket.....	29-3061
65	Mask arm.....	29-3274
66	Coupling.....	29-3339
67	Link.....	29-3338
68	Shadow Screen.....	27-5120
69	Speaker Cable.....	02722
70	Knob (Phono-Radio).....	03334
71	Knob (Tuning).....	27-4206
72	Knob (Slow Speed Tuning).....	27-4207
73	Knob (Volume Program Control).....	27-4208
74	Knob (Wave Band).....	27-4225
75	Socket (4-prong).....	27-6044
76	Socket (6-prong).....	27-6036
77	Socket (7-prong).....	27-6037
78	Speaker Socket.....	27-6043
79	Tube Shield Body.....	28-2726
80	Tube Shield Base.....	28-2725
81	R. F. Shield.....	38-6921
82	I. F. Shield.....	38-6808
83	Wave Switch Nut.....	W-684-A
84	Power Transformer (115 V., 25 cycle).....	32-7403
85	Power Transformer (230 V., 50-60 cycle).....	32-7404
86	Electrolytic Condenser clamp.....	6440
87	Electrolytic Condenser insulator.....	27-7194
88	Chassis Mte. screw.....	W-1496-A
89	Chassis Mtg. washer (rubber).....	27-4201
90	Chassis Mtg. cushion (rubber).....	27-4202
91	Chassis Mtg. sleeve.....	28-3101
92	Mask.....	28-3433
93	Bezel.....	28-3164
94	Bezel mtg. screw.....	W-1494
95	Bezel glass.....	27-8113
96	Bezel glass gasket.....	27-8036
97	Dial scale.....	27-5165
98	Hub & set screw assy.....	31-1724
99	Pilot lamp bracket assy.....	38-6789
100	B.C. Resistor mtg. screw.....	W-888
101	B.C. Resistor mtg. nut.....	W-317-A
102	B.C. Resistor spacer.....	3791
103	Front Bumper.....	27-4200
104	Dial scale (inverted type code 123).....	27-5183
105	Speaker Trans. Terminal cover.....	02824
106	Bottom shield.....	38-7189
107	Speaker mtg. bolt.....	29-3128
108	Speaker mtg. nut.....	W-124-A
109	*Voice coil cone assy. (Furn. H-13).....	02625
110	†Field coil assy. (Furn. H-13).....	02803

*Code 122 Use Type "O" (ODG, etc.) Prefix Condensers

MODEL 660



I. F. — 460 K. C.



REPLACEMENT PARTS—MODEL 660

① Antenna Transformer.....	32-1750	④ Condenser (.05 Mfd. Tubular).....	30-4123
② Waveband Switch.....	42-1120	⑤ Resistor (2 Mega.) (Red, Black, Green).....	33-1025
③ Condenser (.05 Mfd. Tubular).....	30-4020	⑥ Resistor (330000 ohms) (Orange, Orange, Yellow).....	33-1200
④ Compensating Condenser (Ant. Standard).....	Part of ①	⑦ Condenser (.00011 Mfd. Twin Bakelite Block).....	8035-DG
⑤ Compensating Condenser (Ant. Longwave).....	Part of ①	⑧ Resistor (.1 Meg.) (White, White, Yellow).....	6099
⑥ Compensating Condenser (Ant. Police).....	Part of ①	⑨ Condenser (.05 Mfd. Tubular).....	30-4020
⑦ Compensating Condenser (Ant. Shortwave).....	Part of ①	⑩ Resistor (50000 ohms) (Green, Brown, Orange).....	6098
⑧ Resistor (.1 Meg.) (White, White, Orange).....	4411	⑪ Volume Control & On-Off Switch.....	33-5110
⑨ R. F. Transformer.....	32-1751	⑫ Condenser (.01 Mfd. Bakelite Block).....	3903-SU
⑩ Compensating Condenser (R. F. Standard).....	Part of ②	⑬ Resistor (.1 Meg.) (White, White, Yellow).....	6099
⑪ Compensating Condenser (R. F. Longwave).....	Part of ②	⑭ Resistor (70000 ohms) (Violet, Black, Orange).....	5385
⑫ Compensating Condenser (R. F. Police).....	Part of ②	⑮ Resistor (1 Meg.) (Brown, Black, Green).....	33-1096
⑬ Compensating Condenser (R. F. Shortwave).....	Part of ②	⑯ Condenser (.25 Mfd. Tubular).....	30-4134
⑭ Condenser (.00005 Mfd. Mica).....	30-1029	⑰ Resistor (160000 ohms) (Brown, Blue, Orange).....	33-1191
⑮ Oscillator Transformer.....	32-1752	⑱ Condenser (.00011 Mfd. Mica).....	30-1031
⑯ Compensating Condenser (Standard Series).....	Part of 31-6027	⑲ Audio Transformer.....	32-7057
⑰ Compensating Condenser (Longwave Series).....	Part of 31-6054	⑳ Output Transformer.....	32-7078
⑱ Condenser (.00041 Mfd. Mica).....	30-1000	㉑ Cone & Voice Coil Assembly (H-13).....	02625
⑲ Compensating Condenser (Osc. Police Series).....	Part of 31-6027	㉒ Field Coil & Pot Assembly (H-13).....	36-3104
⑲ Condenser (.05 Mfd. Tubular).....	30-4123	㉓ Resistor (B. C. Wirewound) (10 ohms, 110 ohms, 130 ohms).....	33-5137
⑲ Condenser (.0052 Mfd. Mica).....	30-1058	㉔ Resistor (Wirewound, 7750 ohms).....	33-2020
⑲ Compensating Condenser (Osc. Shortwave).....	Part of ③	㉕ Tone Control.....	30-4343
⑲ R. F. Choke.....	32-1745	㉖ Condensers in Tone Control.....	Part of ④
⑲ Condenser (.007 Mfd. Mica).....	5863	㉗ Condenser (Electrolytic) (3 Mfd., 2 Mfd., 1 Mfd.).....	30-2122
⑲ Wave Trap.....	38-6850	㉘ Resistor (30000 ohms) (Orange, Black, Orange).....	7836
⑲ Condenser (.00011 Mfd. Mica).....	30-1031	㉙ Resistor (10000 ohms) (Brown, Black, Orange).....	3524
⑲ Condenser (.00025 Mfd. Mica).....	30-1032	㉚ Resistor (13000 ohms) (Brown, Orange, Orange).....	6450
⑲ Compensating Condenser (Osc. Police).....	Part of ④	㉛ Condenser (Electrolytic: 8 Mfd., 10 Mfd.).....	30-2045
⑲ Compensating Condenser (Longwave H. F. End).....	Part of 31-6054	㉜ Condenser (Electrolytic: 8 Mfd.).....	30-2025
⑲ Compensating Condenser (Osc. Standard).....	Part of ④	㉝ Condenser (3 Mfd. Bakelite Block).....	6287-DG
⑲ Resistor (10000 ohms) (Brown, Black, Orange).....	3524	㉞ Filter Choke.....	32-7056
⑲ Resistor (300 ohms Flexible) (Orange, Black, Black).....	33-3010	㉟ Power Transformer 115 Volts 60 Cycles.....	32-7440
⑲ Condenser (.05 Mfd. Bakelite Block).....	3615-SG	115 Volts 25 Cycles.....	32-7441
⑲ Tuning Condenser Assembly.....	31-1809	230 Volts 50 Cycles.....	32-7442
⑲ Condenser (.00011 Mfd. Mica).....	30-1031	㊱ Condenser (.015 Mfd. Twin Bakelite Block).....	3793-DG
⑲ Resistor (51000 ohms) (Green, Brown, Orange).....	6098	㊲ Pilot Lamp (Dial).....	34-2039
⑲ Resistor (1000 ohms) (Brown, Black, Red).....	5837	㊳ Condenser (.006 Mfd. Tubular).....	30-4125
⑲ Condenser (.00125 Mfd. Tubular).....	30-4336	㊴ Condenser (.006 Mfd. Tubular).....	30-4125
⑲ Resistor (8000 ohms) (Gray, Black, Red).....	5838	㊵ Dial Scale.....	27-5115
⑲ Condenser (.05 Mfd. Bakelite Block).....	3615-SG	㊶ Dial Mask and Hub Assembly.....	31-1575
⑲ Compensating Condenser (1st I. F. Primary).....	Part of ⑤	㊷ Dial Hub.....	28-7129
⑲ 1st I. F. Transformer.....	*32-1642	㊸ Dial Spring Clamp.....	28-2837
⑲ Compensating Condenser (1st I. F. Secondary).....	Part of ⑤	㊹ Socket—4-Prong.....	27-6042
⑲ Condenser (.05 Mfd. Bakelite Block).....	3615-SG	㊺ Socket—5-Prong.....	27-6035
⑲ Resistor (300 ohms Flexible) (Orange, Black, Black).....	33-3010	㊻ Socket—6-Prong.....	27-6036
⑲ Condenser (.05 Mfd. Bakelite Block).....	3615-SU	㊼ Speaker Plug Socket.....	27-6033
⑲ Shadow Tuning Meter.....	*45-2083	㊽ Knob (Volume, Tone, Waveband).....	27-4208
⑲ Resistor (2000 ohms) (Red, Black, Red).....	5984	㊾ Knob (Station Selector).....	27-4206
⑲ Pilot Lamp (Shadow Tuning Meter).....	Part of ⑥	㊿ Knob (Slow Speed).....	27-4207
⑲ Compensating Condenser (2nd I. F. Primary).....	Part of 31-6028	㊱ Tube Shield (4 used).....	28-2726
⑲ 2nd I. F. Transformer.....	132-1734	㊲ Tube Shield (2 used).....	28-2755
⑲ Compensating Condenser (2nd I. F. Tertiary).....	04000-R	㊳ Tube Shield Base.....	28-2725
⑲ Compensating Condenser (2nd I. F. Secondary).....	Part of 31-6028	㊴ A. C. Cord & Plug.....	1-943A
⑲ Resistor (2500 ohms) (Red, Green, Red).....	7775	㊵ Bezel.....	28-3165
⑲ Condenser (.05 Mfd. Twin Bakelite Block).....	3615-DG	㊶ Bezel Glass.....	27-8011
⑲ Compensating Condenser (3rd I. F. Primary).....	Part of 31-6003	㊷ Chassis Mtg. Bolt.....	W-1496A
⑲ Third I. F. Transformer.....	*32-1188	㊸ Chassis Mtg. Washer (Rubber).....	27-4201
⑲ Compensating Condenser (3rd I. F. Secondary).....	Part of 31-6003	㊹ Chassis Mtg. Bumper (Rubber).....	27-4200
⑲ Resistor (1000 ohms) (Brown, Black, Red).....	5837		

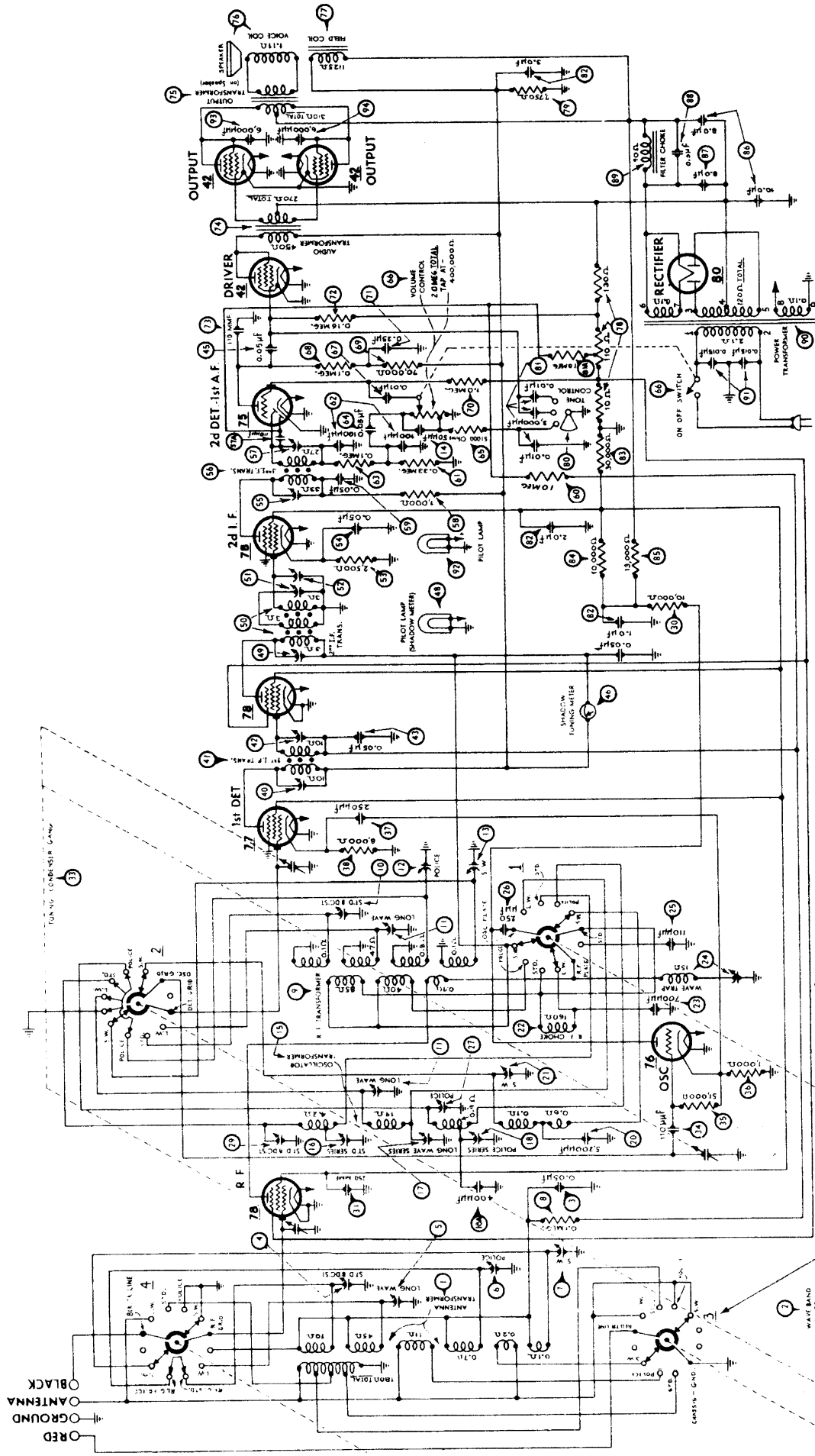
* Code 122: 32-1864

* Code 122: 45-2086

‡ Code 122: 32-1865

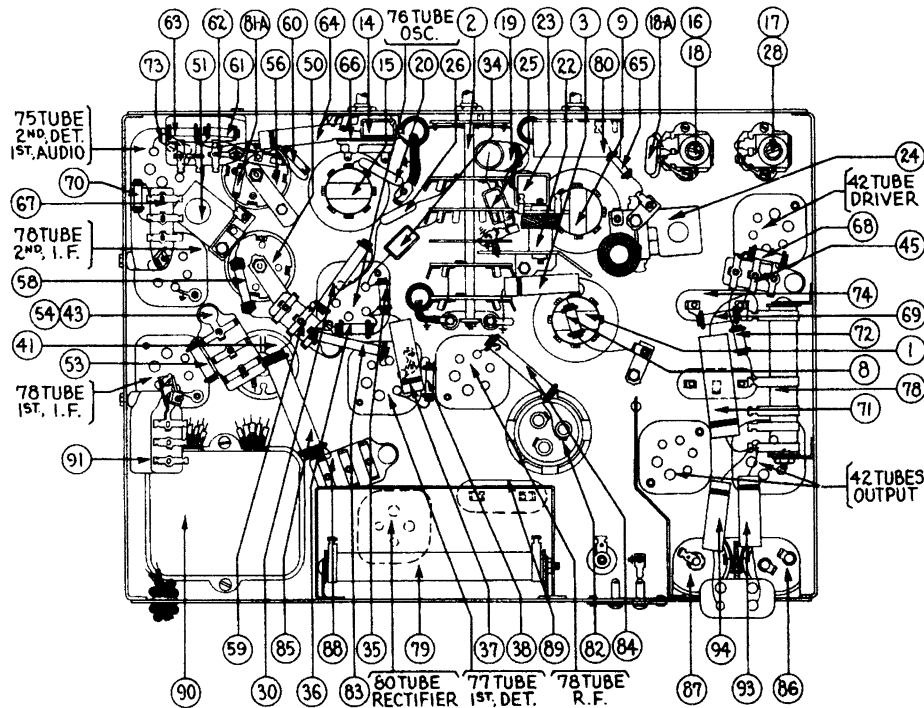
* Code 122: 32-1866

MODEL 665



ALL SWITCH SECTIONS SHOWN IN POSITION NO. 1

NUMBERS INDICATE RELATIVE POSITIONS OF SWITCH SECTIONS 40 0-001 FROM FRONT OF CHASSIS



Replacement Parts—Model 665

① Antenna Transformer	32-1750	ⒸⒸ Volume Control & On-Off Switch	33-5110
② Waveband Switch	42-1120	ⒸⒸ Condenser (.01 Mfd. Bakelite Block)	3903-SU
③ Condenser (.05 Mfd. Tubular)	30-4020	ⒸⒸ Resistor (99000 ohms) (White, White, Orange)	33-399143
④ Compensator (Ant. Standard)	Part of ①	ⒸⒸ Resistor (70000 ohms) (Violet, Black, Orange)	33-370343
⑤ Compensator (Ant. Longwave)	Part of ①	ⒸⒸ Resistor (1 Meg.) (Brown, Black, Green)	33-510143
⑥ Compensator (Ant. Police)	Part of ①	ⒸⒸ Condenser (.25 Mfd. Tubular)	30-4134
⑦ Compensator (Ant. Shortwave)	Part of ①	ⒸⒸ Resistor (160000 ohms) (Brown, Blue, Orange)	33-416133
⑧ Resistor (99,000 ohm) (White, White, Orange)	33-399343	ⒸⒸ Condenser (.00011 Mfd. Mica)	30-1031
⑨ R. F. Transformer	32-1751	ⒸⒸ Audio Transformer	32-7057
⑩ Compensator (R. F. Standard)	Part of ⑨	ⒸⒸ Output Transformer	32-7078
⑪ Compensator (R. F. Longwave)	Part of ⑨	ⒸⒸ Cone & Voice Coil Assembly (H-13)	02625
⑫ Compensator (R. F. Police)	Part of ⑨	ⒸⒸ Field Coil & Pot Assembly (H-13)	36-3104
⑬ Compensator (R. F. Shortwave)	Part of ⑨	ⒸⒸ Resistor (B. C. Wirewound) (10 ohms, 110 ohms, 130 ohms)	33-3226
⑭ Condenser (.00005 Mfd. Mica)	30-1029	ⒸⒸ Resistor (Wirewound, 7750 ohms)	33-3020
⑮ Oscillator Transformer	32-1752	ⒸⒸ Tone Control	30-4378
⑯ Compensator (Standard Series)	Part of 31-6027	ⒸⒸ Condensers in Tone Control	Part of ⑮
⑰ Compensator (Longwave Series)	Part of 31-6054	ⒸⒸ Resistor (1.0 Meg. ¼ Watt)	33-510143
⑱ Condenser (.0004 Mfd. Mica)	30-1000	ⒸⒸ Condenser (Electrolytic) (3 Mfd., 2 Mfd., 1 Mfd.)	30-2122
⑲ Compensator (Osc. Police Series)	Part of 31-6027	ⒸⒸ Resistor (30000 ohms) (Orange, Black, Orange)	33-330443
⑳ Condenser (.1 Mfd. Tubular)	30-4170	ⒸⒸ Resistor (10000 ohms) (Brown, Black, Orange)	33-310433
㉑ Condenser (.0052 Mfd. Mica)	30-1058	ⒸⒸ Resistor (13000 ohms) (Brown, Orange, Orange)	33-313633
㉒ Compensator (Osc. Shortwave)	Part of ㉑	ⒸⒸ Condenser (Electrolytic, 8 Mfd., 10 Mfd.)	30-2045
㉓ R. F. Choke	32-1745	ⒸⒸ Condenser (Electrolytic, 8 Mfd.)	30-2025
㉔ Condenser (.0007 Mfd. Mica)	5863	ⒸⒸ Condenser (.3 Mfd. Bakelite Block)	6287-1U
㉕ Wave Trap	38-6850	ⒸⒸ Filter Choke	32-7056
㉖ Condenser (.00011 Mfd. Mica)	30-1031	ⒸⒸ Power Transformer 115 Volts 60 Cycles.	32-7440
㉗ Condenser (.00025 Mfd. Mica)	30-1032	ⒸⒸ 115 Volts 25 Cycles.	32-7441
㉘ Compensator (Osc. Police)	Part of ㉘	ⒸⒸ 230 Volts 50 Cycles.	32-7442
㉙ Compensator (Longwave H. F. End)	Part of 31-6054	ⒸⒸ Condenser (.015 Mfd. Twin Bakelite Block)	3793-DG
㉚ Compensator (Osc. Standard)	Part of ㉚	ⒸⒸ Pilot Lamp (Dial)	34-2039
㉛ Resistor (10000 ohms) (Brown, Black, Orange)	33-310433	ⒸⒸ Condenser (.006 Mfd. Tubular)	30-4024
㉜ Condenser (.00025 Mica)	30-1032	ⒸⒸ Condenser (.006 Mfd. Tubular)	30-4024
㉝ Tuning Condenser Assembly	31-1009	ⒸⒸ Dial Scale	27-5115
㉞ Condenser (.00011 Mfd. Mica)	30-1031	ⒸⒸ Dial Mask and Hub Assembly	31-1724
㉟ Resistor (51000 ohms) (Green, Brown, Orange)	33-351143	ⒸⒸ Dial Hub	28-7129
㊱ Resistor (1000 ohms) (Brown, Black, Red)	33-210343	ⒸⒸ Dial Spring Clamp	28-2817
㊲ Condenser (.00025 Mica)	30-1032	ⒸⒸ Socket—4-Prong	27-6042
㊳ Resistor (8000 ohms) (Gray, Black, Red)	33-280133	ⒸⒸ Socket—5-Prong	27-6035
㊴ Compensator (1st I. F. Primary)	Part of ㊴	ⒸⒸ Socket—6-Prong	27-6036
㊵ 1st I. F. Transformer	32-1642	ⒸⒸ Speaker Plug Socket	27-6033
㊶ Compensator (1st I. F. Secondary)	Part of ㊶	ⒸⒸ Knob (Volume, Tone, Waveband)	27-4208
㊷ Condenser (.05 Mfd. Bakelite Block)	3615-SG	ⒸⒸ Knob (Station Selector)	27-4206
㊸ Condenser (.05 Mfd. Bakelite Block)	3615-SU	ⒸⒸ Knob (Slow Speed)	27-4207
㊹ Shadow Tuning Meter	45-2083	ⒸⒸ Tube Shield (4 used)	28-2726
㊺ Pilot Lamp (Shadow Tuning Meter)	Part of ㊺	ⒸⒸ Tube Shield (2 used)	28-2755
㊻ Compensator (2nd I. F. Primary)	31-6067	ⒸⒸ Tube Shield Base	28-2725
㊼ 2nd I. F. Transformer	32-1865	ⒸⒸ A. C. Cord & Plug	1-943A
㊽ Compensator (2nd I. F. Secondary)	04000-R	ⒸⒸ Bezel	28-3165
㊾ Resistor (2500 ohms) (Red, Green, Red)	33-225343	ⒸⒸ Bezel Glass	27-8011
㊿ Condenser (.05 Mfd. Twin Bakelite Block)	Part of ㊿	ⒸⒸ Chassis Mtg. Bolt	W-1496A
Ⓚ Compensator (3rd I. F. Primary)	Part of 31-6003	ⒸⒸ Chassis Mtg. Washer (Rubber)	27-4201
Ⓛ 3rd I. F. Transformer	32-1188	ⒸⒸ Chassis Mtg. Bumper (Rubber)	27-4200
Ⓜ Compensator (3rd I. F. Secondary)	Part of 31-6003	ⒸⒸ Mask	27-5136
Ⓨ Condenser (.110 Mfd. Mica)	30-1031	ⒸⒸ Scale and Mask Guide	29-3272
Ⓩ Resistor (1000 ohms) (Brown, Black, Red)	33-210633	ⒸⒸ R. F. Shield Assy.	38-6938
ⓐ Condenser (.05 Mfd. Bakelite)	3615-SG	ⒸⒸ I. F. Shield Assy.	38-6872
ⓑ Resistor (1.0 Meg. ¼ Watt)	33-510143	ⒸⒸ Elec. Condenser Clamp	29-2460
ⓒ Resistor (330000 ohms) (Orange, Orange, Yellow)	33-33133	ⒸⒸ Elec. Condenser Clamp	6440
ⓓ Condenser (.00011 Mfd. Twin Bakelite Block)	8035-DG	ⒸⒸ Elec. Condenser Insulator	27-7194
ⓔ Resistor (99000 ohms) (White, White, Orange)	33-399143	ⒸⒸ Shadow Meter Light Shield	28-2917
ⓕ Condenser (.05 Mfd. Tubular)	30-4020	ⒸⒸ Wave Switch Coupling	28-7150
ⓖ Resistor (5000 ohms) (Green, Brown, Orange)	33-351143	ⒸⒸ Inverted Dial Scale	27-5123

* Code 122: 32-1864

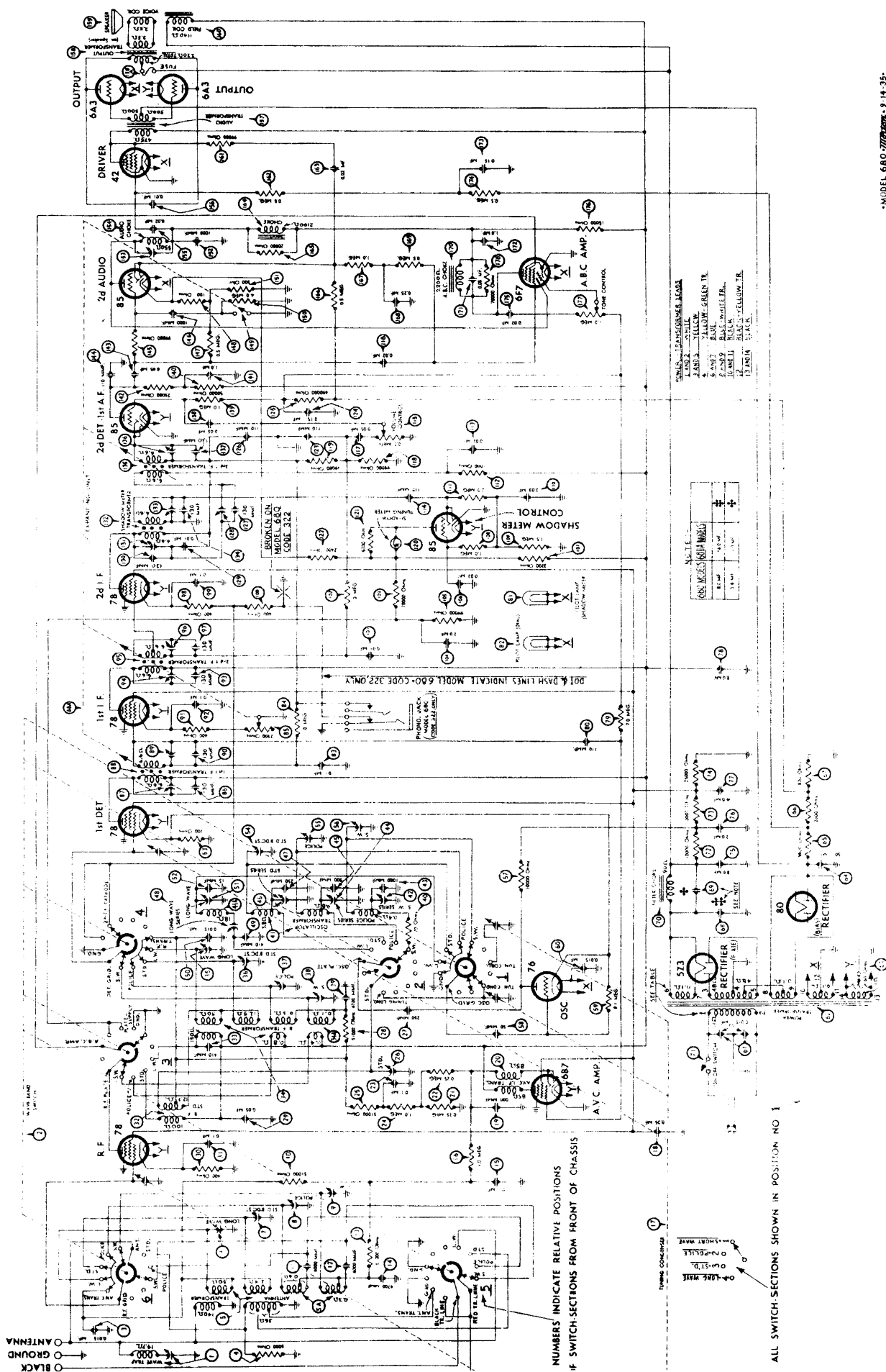
△ Code 122: 32-1866

□ Code 122: 30-4379

○ Code 122: 30-2014

+ The letter O should be added to parts Ⓒ, ⒸⒸ, ⒸⒸⒸ, ⒸⒸⒸⒸ, ⒸⒸⒸⒸⒸ, ⒸⒸⒸⒸⒸⒸ, for Code 122. Example (3615-DG = 3615-ODG).

MODEL 680

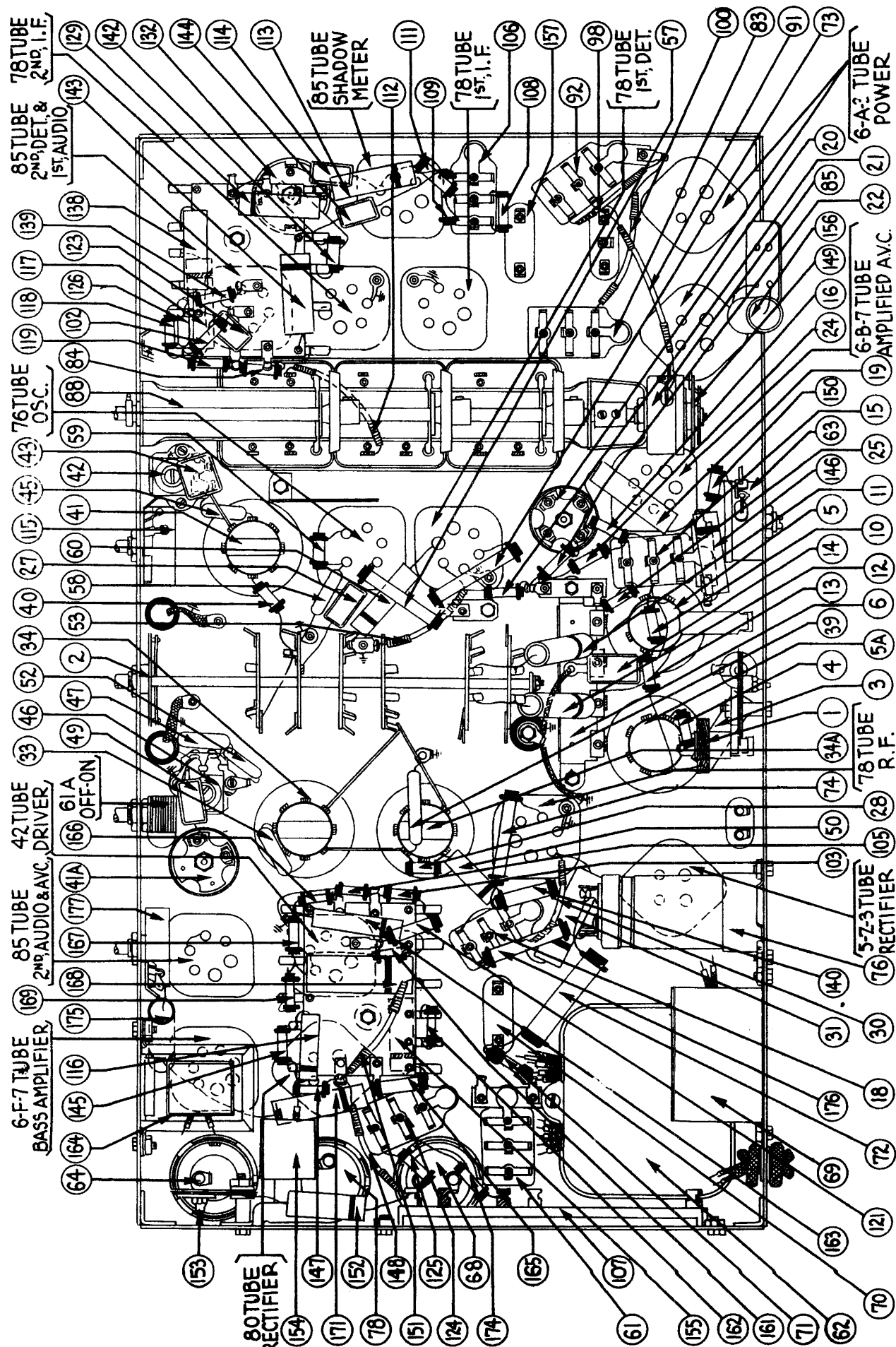


NUMBERS INDICATE RELATIVE POSITIONS
OF SWITCH-SECTIONS FROM FRONT OF CHASSIS

ALL SWITCH-SECTIONS SHOWN IN POSITION NO. 1

I. F. -- 460 K. C.

MODEL 680



Replacement Parts for Model 680

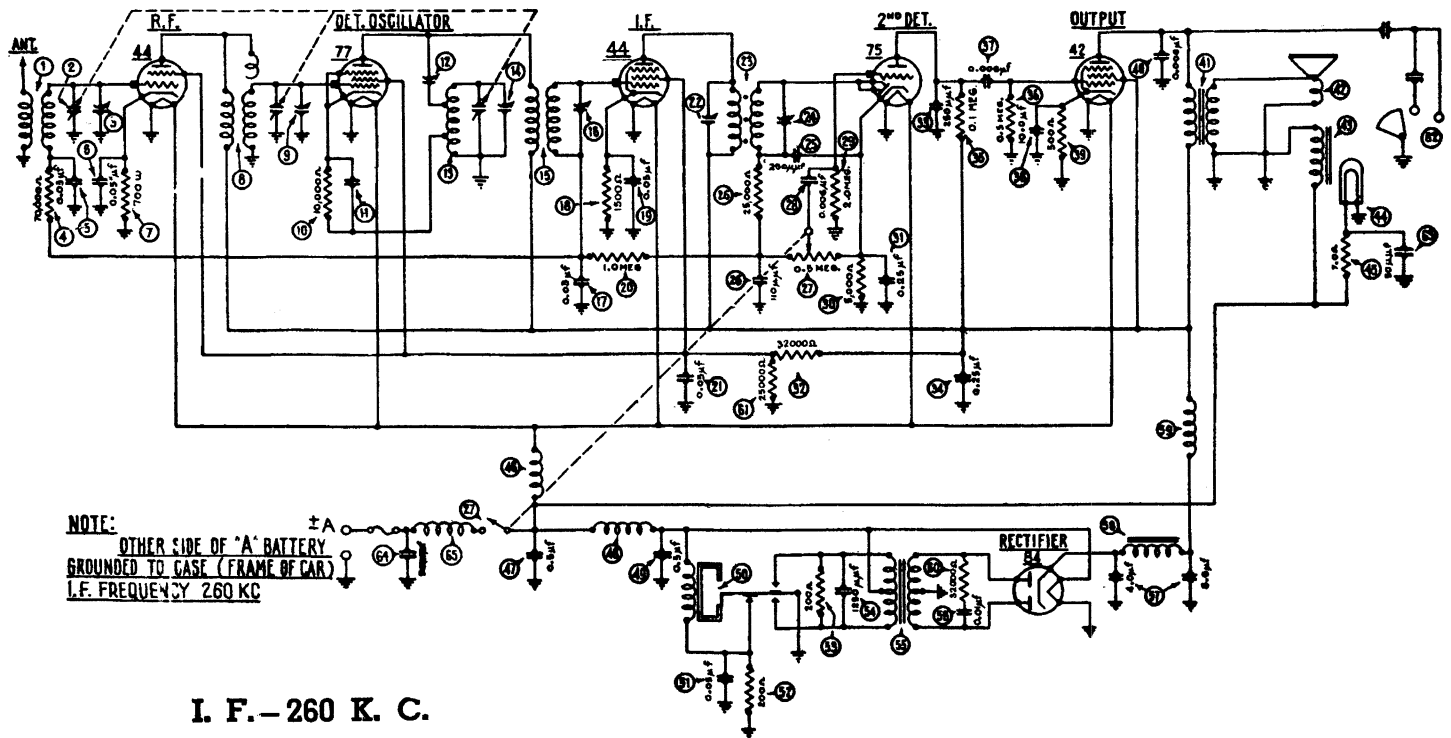
Schematic No.	Part and Description	Part No.
①	Wave Trap	38-6850
②	Wave Band Switch	42-1127
③	Condenser (0.015 mf.)	39-4358
④	Resistor (5,000 ohms)	6096
⑤	Antenna Transformer (Bdct. 3 and 4)	32-1811
⑤a	Antenna Transformer (Bdct. 1 and 2)	32-1812
⑥	Padder (Antenna Band 4)	31-6047
⑦	Padder (Antenna Band 3)	
⑧	Padder (Antenna Band 2)	
⑨	Padder (Antenna Band 1)	
⑩	Resistor (51,000 ohms)	6098
⑪	Condenser (6,000 mmf.)	30-4125
⑫	Condenser (6,000 mmf.)	30-4125
⑬	Resistor (51,000 ohms)	6098
⑭	Condenser (4,700 mmf.)	30-1052
⑮	Condenser (0.1 mf.)	4989-ODG
⑯	Resistor (1.0 meg.)	33-1096
⑰	Condenser Gang	31-1619
⑱	Condenser (0.05 mf.)	3615-ODG
⑲	Condenser (1,000 mmf.)	30-4201
⑳	I.F. Transformer (AVC)	32-1837
㉑	Resistor (0.25 meg.)	6097
㉒	Resistor (0.25 meg.)	6097
㉓	Condenser (0.1 mf.)	Part of ㉔
㉔	Resistor (1.0 meg.)	33-1096
㉕	Resistor (51,000 ohms)	6098
㉖	Padder (R.F. Std.)	Part of ㉗
㉗	Condenser (250 mmf.)	30-1032
㉘	Resistor (51,000 ohms)	6098
㉙	Condenser (0.05 mf.)	Part of ㉚
㉚	Resistor (400 ohms)	33-3016
㉛	Condenser (0.1 mf.)	30-4122
㉜	Transformer	Part of ㉝
㉝	Condenser (410 mmf.)	30-1000
㉞	Detector Transformer (Bdct. 4 and 2)	32-1813
㉞a	Detector Transformer (Bdct. 1 and 3)	32-1814
㉟	Padder (Det. Weather)	31-6058
㊱	Padder (Det. Tertiary)	
㊲	Padder (Det. Police)	
㊳	Padder (Part of ㉞a)	61-6059
㊴	Condenser (4,700 mmf.)	30-1052
㊵	Resistor (70 ohms)	33-1129
㊶	Oscillator Transformer (Bdct. 1, 2 and 3)	32-1815
㊶a	Oscillator Transformer (Bdct. 1)	32-1816
㊷	Padder (S.W. Series)	31-6027
㊸	Condenser (1,000 mmf.)	30-1063
㊹	Padder (Police Series)	Part of ㊺
㊺	Condenser (900 mmf.)	30-1060
㊻	Padder (Standard)	31-6033
㊼	Condenser (250 mmf.)	30-1032
㊽	Padder (Weather Srs.)	Part of ㊾
㊾	Condenser (410 mmf.)	30-1000
㊿	Condenser (0.015 mf.)	30-4358
1	Padder (Osc. Weather)	Part of 2
2	Condenser (15 mmf.)	30-1030
3	Resistor (700 ohms)	33-3124
4	Padder (Osc. Standard)	31-6057
5	Padder (Osc. Police)	
6	Padder (Osc. Short Wave)	
7	Resistor (10,000 ohms)	3524
8	Condenser (50 mmf.)	4587
9	Resistor (100,000 ohms)	6099
10	Condenser (0.015 mf.)	30-4358
11	Power Transformer (Hum. Act.)	33-5111
12	Potentiometer (Hum. Act.)	33-5111
13	Condenser (50.0 mf.)	30-2128X
14	Resistor (9,800 ohms)	33-3216
15	Resistor (2,600 ohms)	
16	Resistor (800 ohms)	
17	Condenser (8.0 mf.) double	30-2028M
18	Condenser (0.6 mf.)	30-4384

Schematic No.	Part and Description	Part No.
19	Choke (Filter)	32-7056
20	Off-On Switch	42-1129
21	Resistor (10,000 ohms)	33-1024
22	Resistor (10,000 ohms)	3524
23	Resistor (25,000 ohms)	3656
24	Condenser (8.0 mf.)	Part of 25
25	Condenser (2.0, 2.0, 1.0, 1.0 mf.)	30-2130
26	Condenser (4.0 mf.)	30-2129
27	Condenser (8.0 mf.)	Part of 28
28	Resistor (2.0 meg.)	33-1025
29	Condenser (110 mmf.)	30-1031
30	Pilot Lamp (Shadowmeter)	6608
31	Pilot Lamp (Dial Scale)	34-2039
32	Condenser (0.1 mf.)	4989-ODG
33	Resistor (1.0 meg.)	33-1096
34	Potentiometer (2300 ohms)	33-5124
35	Condenser (130 mmf.)	30-1036
36	Padder (Primary)	31-6055
37	1st I.F. Transformer	Part of I.F. Unit ㉞a
㉞a	I.F. Expander Unit	
㉞b	Padder (Secondary)	38-7013
㉞c	Condenser (130 mmf.)	30-1036
㉞d	Resistor (400 ohms)	33-3016
㉞e	Condenser (0.1 mf.)	4989-ODG
㉞f	Condenser (130 mmf.)	30-1036
㉞g	Padder (Primary)	31-6055
㉞h	2nd I.F. Transformer	Part of I.F. Unit ㉞a
㉞i	Padder (Secondary)	
㉞j	Condenser (130 mmf.)	30-1036
㉞k	Resistor (400 ohms)	33-3016
㉞l	Condenser (0.1 mf.)	Part of ㉞m
㉞m	Resistor (400 ohms)	33-3016
㉞n	Condenser (0.01 mf.)	Part of ㉞o
㉞o	Resistor (1.0 meg.)	33-1096
㉞p	Resistor (70,000 ohms)	33-1115
㉞q	Condenser (2.0 mf.)	Part of ㉞r
㉞r	Resistor (99,000 ohms)	6099
㉞s	Condenser (0.03 mf.)	8318-OSG
㉞t	Resistor (3,200 ohms)	33-3215
㉞u	Resistor (1.0 meg.)	33-1096
㉞v	Resistor (1.5 meg.)	33-1188
㉞w	Condenser (0.03 mf.)	Part of ㉞x
㉞x	Resistor (2.0 meg.)	33-1025
㉞y	Resistor (1,000 ohms)	33-3017
㉞z	Condenser (0.02 mf.)	30-4113
㉟	Condenser (110 mmf.)	30-1031
㊱	Potentiometer (Volume 0.5 meg.)	33-5117
㊲	Condenser (0.02 mf.)	30-4215S
㊳	Condenser (0.05 mf.)	30-4020P
㊴	Resistor (99,000 ohms)	6099
㊵	Resistor (99,000 ohms)	6099
㊶	Shadow Meter	45-2088
㊷	Resistor (6,000 ohms)	7352
㊸	Resistor (2,400 ohms)	Part of ㊹
㊹	Condenser (110 mmf.)	30-1031
㊺	Condenser (0.15 mf.)	6287-ODG
㊻	Resistor (490,000 ohms)	6097
㊼	Condenser (110 mmf.)	30-1031
㊽	Condenser (130 mmf.)	30-1036
㊾	Padder (Primary)	31-6055
㊿	Condenser (0.01 mf.)	30-4124P
1	Condenser (130 mmf.)	30-1036
2	Padder (Primary)	31-6055
3	I.F. Transformer (Shadow Meter)	32-1838
4	Padder (Secondary)	Part of 5
5	Condenser (130 mmf.)	30-1036
6	3d I.F. Transformer	Part of I.F. Unit ㉞a
7	Padder (Secondary)	
8	Condenser (130 mmf.)	30-1036
9	Condenser (0.05 mf.)	38-4020M
10	Resistor (1.0 meg.)	33-1096
11	Resistor (50,000 ohms)	4518

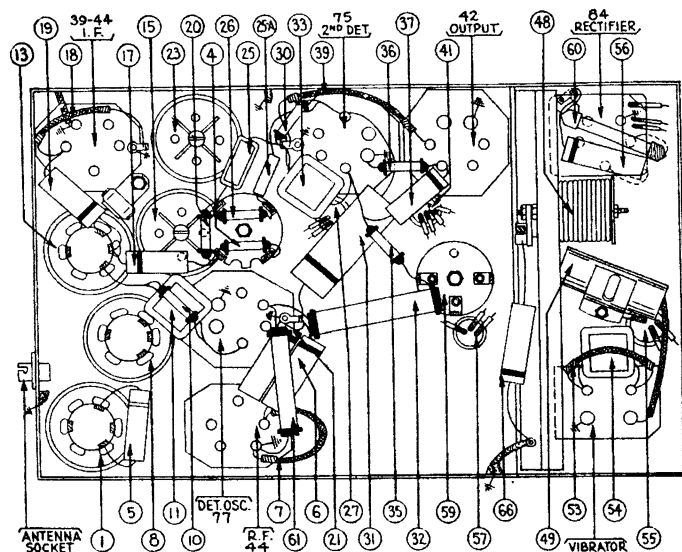
Schematic No.	Part and Description	Part No.
12	Condenser (1.0 mf.)	Part of 13
13	Resistor (25,000 ohms)	33-1013
14	Condenser (0.05 mf.)	30-4020M
15	Condenser (110 mf.)	30-1031
16	Resistor (99,000 ohms)	6099
17	Condenser (1,000 mmf.)	30-1063
18	Resistor (0.5 meg.)	6097
19	Resistor (100 ohms)	33-3187
20	Switch	Part of ㉞a I.F. Exp. Unit
21	Resistor (4.0 meg.)	33-1002
22	Resistor (300 ohms)	33-3121
23	Condenser (1,000 mmf.)	30-1063
24	Padder	04000-T
25	Transformer (10KC Filter)	32-7368
26	Condenser (0.02 mf.)	30-4215S
27	Condenser (0.01 mf.)	30-4051P
28	Input Transformer	32-7446
29	Output Transformer	32-7461
30	Fuse	45-2113
31	Speaker Cone Assembly	36-3381
32	Field Coil Assembly	36-3162
33	Resistor (99,000 ohms)	6099
34	Resistor (0.5 meg.)	6097
35	Condenser (0.02 mf.)	6097
36	Choke	32-7476
37	Resistor (20,000 ohms)	6650
38	Resistor (0.5 meg.)	6097
39	Resistor (1.0 meg.)	33-1096
40	Condenser (0.25 mf.)	6097
41	Resistor (0.5 meg.)	6097
42	Choke (Bass)	32-7478
43	Condenser (0.06 mf.)	30-4173
44	Condenser (1.0 mf.)	Part of 45
45	Condenser (0.15 mf.)	Part of 46
46	Resistor (0.5 meg.)	6097
47	Condenser (0.02 mf.)	30-4113X
48	Resistor (15,000 ohms)	5278
49	Potentiometer (1.0 meg.)	33-5118
50	Resistor (70,000 ohms)	33-1182
51	Dial Mask Assembly	31-1575
52	Dial Mask Bearing	28-6307
53	Dial Mask Bearing Nut	28-6308
54	Cord Take-up Slide	28-7134
55	Mask Drive Cord	31-1580
56	Drive Cord Spring	28-8386
57	Dial Scale	27-5127
58	R.F. Shield Assembly	38-6938
59	R.F. Shield Assembly	38-6973
60	I.F. Shield Assembly	38-6986
61	Coil Shield (Oscillator-Long Wave)	5840
62	5-Prong Socket	27-6035
63	6-Prong Socket	27-6036
64	7-Prong Socket	27-6037
65	4-Prong Socket	27-6044
66	Speaker Socket	27-6043
67	Tube Shield Body	28-2726
68	Tube Shield Base	28-2725
69	Knob (Station Selector)	27-4206
70	Knob (Slow Tuning)	27-4207
71	Knob (Off-On, Fidelity, Volume, Bass)	27-4225
72	Bezel	28-3165
73	Bezel Gasket	27-7982
74	Bezel Glass	27-8114
75	Acoustic Compensator	36-1155
76	Speaker Cable	02722
77	Shadow Screen	27-5120
78	Mounting Foot	29-2957
79	Wave Switch Shaft (Coupling)	28-7121
80	Bottom Shield Assembly	38-7042
81	Mounting Clamp (Electrolytic Condenser)	6440
82	Insulator	27-7194
83	Fahnestock Clip (Antenna and Ground)	L-1126

MODEL 700

(Auto Radio)

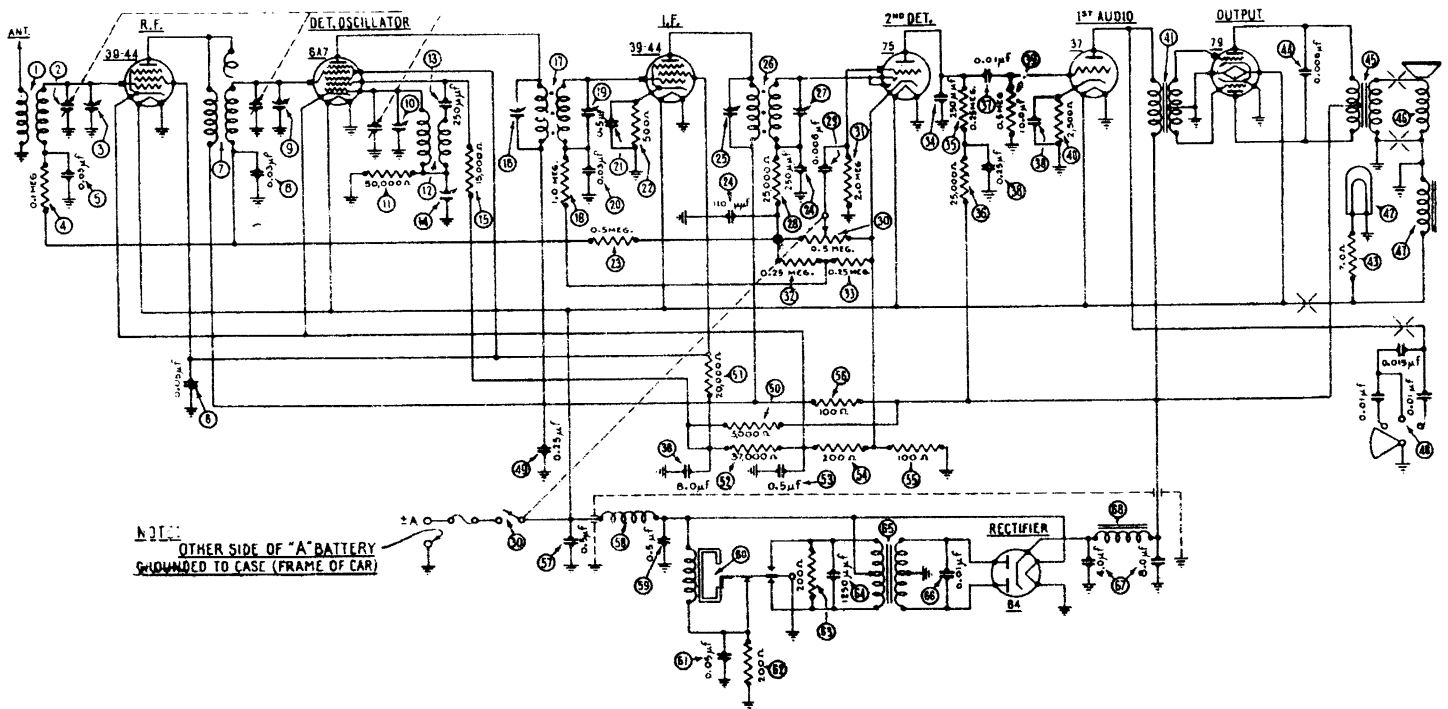


MODEL 700 PARTS LIST



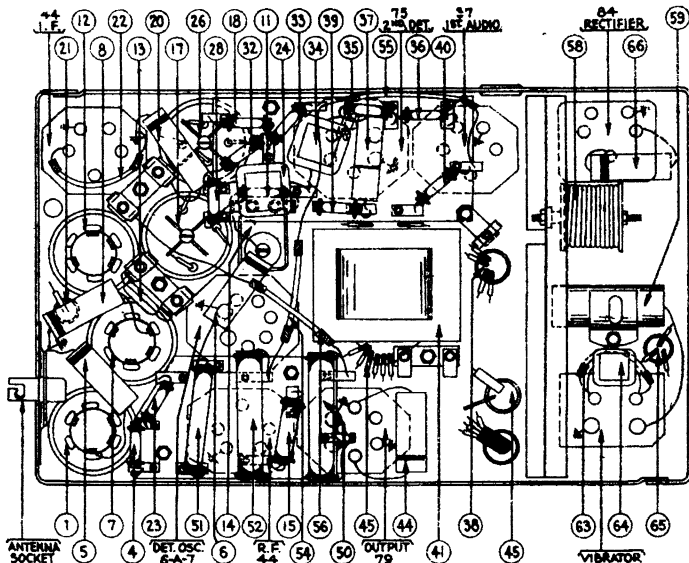
1 Antenna Transformer.....	32-1331	46 "A" Choke.....	32-1402
2 Tuning Condenser.....	31-1199	47 Condenser (.5 mfd.).....	30-4184
3 1st Padder (in tun. cond.).....		48 Vibrator Choke.....	32-1235
4 Resistor (70,000 ohms).....	33-1115	49 Condenser (.5 mfd.).....	30-4015
5 Condenser (.03 mfd.).....	30-4025	50 Vibrator.....	38-5036
6 Condenser (.05 mfd.).....	30-4020	51 Condenser (.05 mfd.).....	30-4039
7 Resistor (700 ohms).....	6443	52 Resistor (200 ohms).....	7217
8 R. F. Transformer.....	32-1332	53 Resistor (200 ohms).....	7217
9 2nd Padder (in tun. cond.).....		54 Condenser (.00125 mfd.).....	5886
10 Resistor (10,000 ohms).....	33-1000	55 Power Transformer.....	32-7216
11 Condenser (.00025 mfd.).....	30-1032	56 Condenser (.01 mfd.).....	30-4051
12 Padder (Pri. 1st I. F. Tran.).....		57 Condenser (4-8 mfd.).....	30-2072
13 Oscillator Transformer.....	32-1333	58 "B" Choke.....	32-7215
14 3rd Padder (in tun. cond.).....		59 R. F. Choke.....	32-1281
15 1st I. F. Transformer.....	32-1329	60 Resistor (32,000 ohms).....	3525
16 Padder (Sec. 1st I. F. Tran.).....		61 Resistor (25,000 ohms).....	33-1013
17 Condenser (.03 mfd.).....	30-4025	62 Tone Control.....	30-4180
18 Resistor (1500 ohms).....	33-3047	63 Condenser (.00005 mfd.).....	30-1029
19 Condenser (.05 mfd.).....	30-4020	64 Condenser (.00025 mfd.).....	30-1034
20 Resistor (1,000,000 ohms).....	33-1096	65 "A" Choke.....	32-1374
21 Condenser (.05 mfd.).....	30-4020		
22 Padder (Pri. 2nd I. F. Tran.).....		Spark Plug Resistor.....	33-1015
23 2nd I. F. Transformer.....	32-1237	Distributor Resistor.....	33-1113E
24 Padder (Sec. 2nd I. F. Tran.).....		Interference Condenser.....	30-4007
25 Condenser (.00025 mfd.).....	30-1032	Nuts (mounting).....	W55A
26 A Condenser (.00011 mfd.).....	30-1031	Battery Cable.....	38-5296
27 Resistor (25,000 ohms).....	33-1013	Acorn Nut.....	W821
28 Vol. Con. & Switch Assm.....	38-5534	Fuse.....	7227
29 Condenser (.006 mfd.).....	30-4125	Fuse Insulator.....	27-7131
30 Resistor (2,000,000 ohms).....	33-1025	Studs.....	28-6036
31 Resistor (5000 ohms).....	6096	Bracket.....	6035
32 Condenser (.25 mfd.).....	30-4146	Strap.....	04344
33 Resistor (32,000 ohms).....	3525	Strap Pad.....	6206
34 Condenser (.00025 mfd.).....	3082	Knob.....	27-4058
35 Condenser (.25 mfd.).....	04360	Glass.....	27-7325
36 Resistor (100,000 ohms).....	6099	Gasket (for glass).....	27-7509
37 Resistor (500,000 ohms).....	6097	Pointer.....	28-1957
38 Condenser (.006 mfd.).....	30-4125	Face Assembly.....	42-5189
39 Condenser (10 mfd.).....	30-2072	Control Housing Cover.....	29-7064
40 Resistor (500 ohms).....	33-3031	Control Unit Assembly.....	42-5184
41 Condenser (.006 mfd.).....	30-4024	Shaft.....	28-8206
42 Output Transformer.....	32-7214	Antenna Lead.....	38-5771
43 Cone & Voice Coil.....	36-3157	4-Prong Socket.....	4955
44 Field Coil Assembly.....	36-3046	5-Prong Socket.....	27-6014
45 Pilot Lamp.....	34-2031	6-Prong Socket.....	6417C

MODEL 800 (Auto Radio)



L F. -260 K. C.

MODEL 800 PARTS LIST



① Antenna Transformer.....	32-1220	④② Pilot Lamp.....	\$608
② Tuning Condenser.....	31-1083	④③ Resistor (7 ohms).....	33-3130
③ 1st Padder (in tuning cond.).....		④④ Condenser (.006 mfd.).....	30-4024
④ Resistor (100,000 ohms).....	6099	④⑤ Output Transformer.....	32-7205
⑤ Condenser (.03 mfd.).....	30-4025	④⑥ Cone and Voice Coil.....	36-3159
⑥ Condenser (.05 mfd.).....	30-4020	④⑦ Field Coil Assembly.....	36-3130
⑦ R. F. Transformer.....	32-1221	④⑧ Tone Control.....	30-4142
⑧ Condenser (.03 mfd.).....	30-4025	④⑨ Condenser (.25 mfd.).....	30-4134
⑨ 2nd Padder (in tuning cond.).....		⑤① Resistor (5,000 ohms).....	33-1070
⑩ 3rd Padder (in tuning cond.).....		⑤② Resistor (20,000 ohms).....	6649
⑪ Resistor (50,000 ohms).....	6098	⑤③ Resistor (37,000 ohms).....	33-1098
⑫ Oscillator Transformer.....	32-1222	⑤④ Condenser (.5 mfd.).....	30-4018
⑬ Condenser (.00025 mfd.).....	3082	⑤⑤ Resistor (200 ohms).....	7217
⑭ Padder.....	31-6012	⑤⑥ Resistor (100 ohms).....	33-3023
⑮ Resistor (15,000 ohms).....	6208	⑤⑦ Resistor (100 ohms).....	33-3023
⑯ Padder (prim. 1st I. F.).....		⑤⑧ Condenser (.5 mfd.).....	30-4015
⑰ First I. F. Transformer.....	32-1236	⑤⑨ Vibrator Choke.....	32-1335
⑱ Resistor (1,000,000 ohms).....	33-1096	⑤⑩ Condenser (.5 mfd.).....	30-4115
⑲ Padder (secondary 1st I. F.).....		⑥① Vibrator Unit.....	38-5036
⑳ Condenser (.03 mfd.).....	30-4025	⑥② Condenser (.05 mfd.).....	30-4039
㉑ Condenser (.5 mfd.).....	30-4058	⑥③ Resistor (200 ohms).....	7217
㉒ Resistor (500 ohms).....	6977	⑥④ Resistor (200 ohms).....	7217
㉓ Resistor (500,000 ohms).....	6097	⑥⑤ Condenser (.00125 mfd.).....	5886
㉔ Condenser (.00011-.00025).....	30-1020	⑥⑥ Power Transformer.....	32-7098
㉕ Padder (prim. 2nd I. F.).....		⑥⑦ Condenser (.01 mfd.).....	30-4051
㉖ Second I. F. Transformer.....	32-1237	⑥⑧ Filter Condenser (4-8 mfd.).....	30-2015
㉗ Padder (secondary 2nd I. F.).....		⑥⑨ "B" Choke.....	32-7014
㉘ Resistor (25,000 ohms).....	33-1013	Spark Plug Resistors.....	33-1015
㉙ Condenser (.006 mfd.).....	30-4125	Distributor Resistor.....	4546
㉚ Volume Control Assembly.....	33-5058	Interference Condenser.....	30-4007
㉛ Resistor (2,000,000 ohms).....	33-1025	Dial.....	27-5022
㉜ Resistor (250,000 ohms).....	33-1097	Studs.....	28-6036
㉝ Resistor (250,000 ohms).....	33-1097	Nuts (mounting).....	W55
㉞ Condenser (.00025 mfd.).....	5858	Knobs.....	03334
㉟ Resistor (250,000 ohms).....	33-1097	Battery Cable.....	38-5296
㊱ Resistor (25,000 ohms).....	33-1013	Antenna Lead.....	38-5131
㊲ Condenser (.01 mfd.).....	30-4145	Control Unit Assembly.....	42-5077
㊳ Condenser (.25-8-10mfd.).....	30-4135	Acorn Nut.....	W821
㊴ Resistor (500,000 ohms).....	6097	Key.....	6091
㊵ Resistor (2500 ohms).....	33-1100	Flex. Shaft (28") Vol. Con. 28-8141	
㊶ Input Transformer.....	32-7206	plex. Shaft (28") Tun. Con. 28-8139	

MODEL 800 (Code 122)

(Auto Radio)

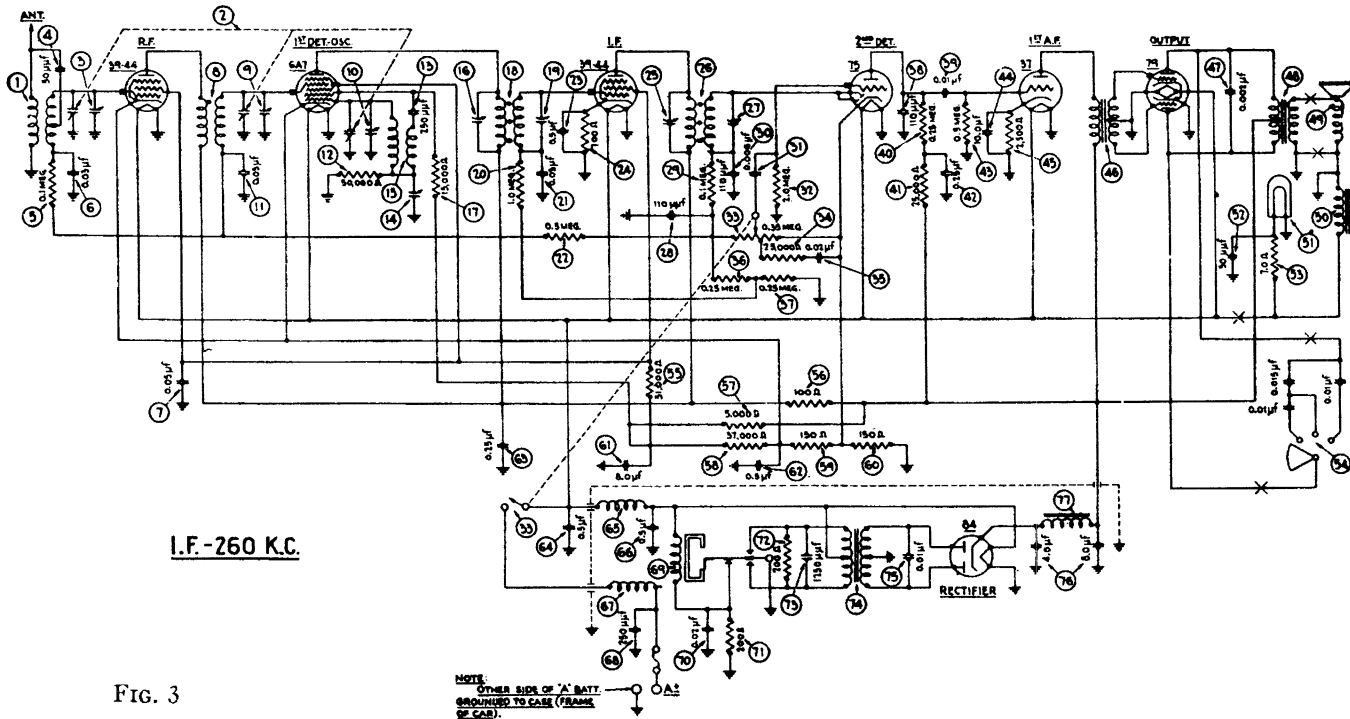
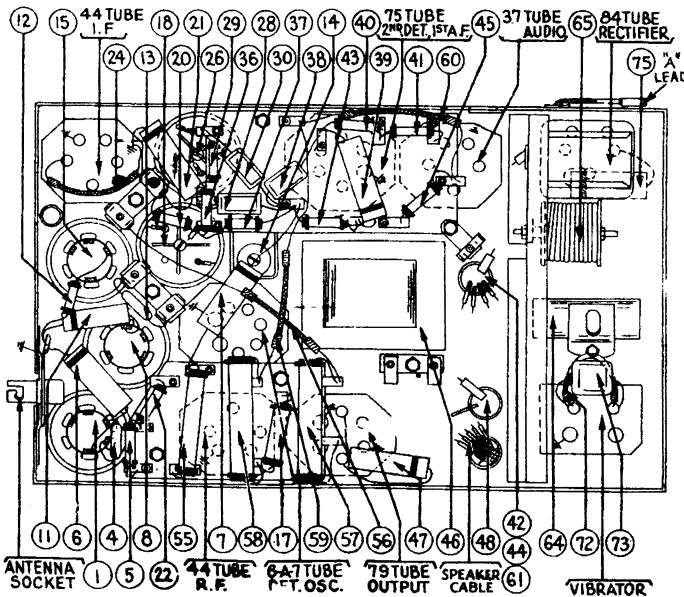


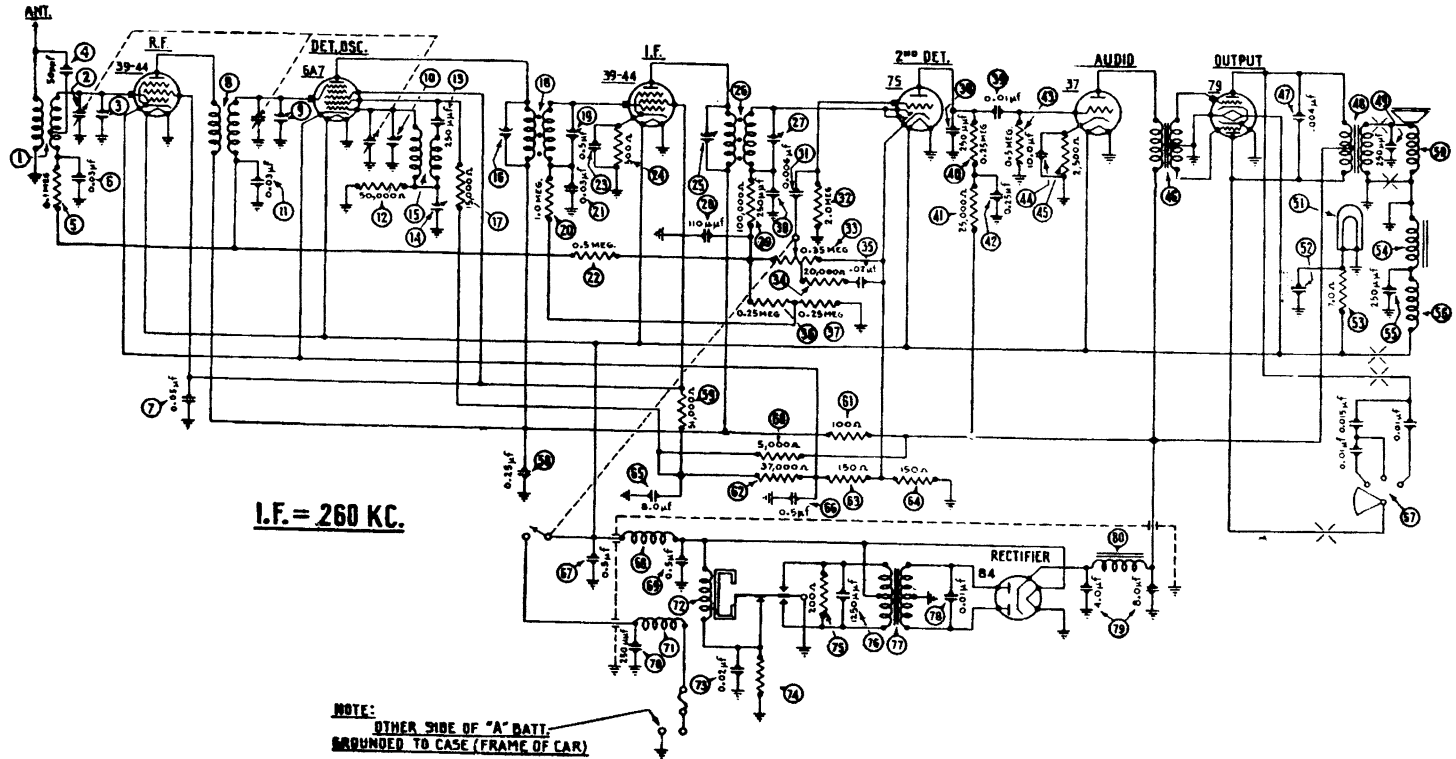
FIG. 3



MODEL 800 (CODE 122) PARTS LIST

1	Antenna Transformer.....	32-1462	68	Resistor (7 ohms).....	33-3130
2	Tuning Condenser.....	31-1202	69	Tone Control.....	30-4220
3	First Padder (in tun. cond.).....		70	Resistor (51,000 ohms).....	4237
4	Condenser (50 mmfd.).....	30-1029	71	Resistor (100 ohms).....	33-3023
5	Resistor (100,000 ohms).....	6099	72	Resistor (5000 ohms).....	33-1070
6	Condenser (.03 mfd.).....	30-4025	73	Resistor (37,000 ohms).....	33-1098
7	Condenser (.05 mfd.).....	30-4020	74	Resistor (150 ohms).....	33-3045
8	R. F. Transformer.....	32-1463	75	Resistor (150 ohms).....	33-3045
9	Second Padder (in tun. cond.).....		76	Condenser (8 mfd.).....	30-4135
10	Third Padder (in tun. cond.).....		77	Condenser (.5 mfd.).....	30-4018
11	Condenser (.03 mfd.).....	30-4025	78	Condenser (.25 mfd.).....	30-4134
12	Resistor (50,000 ohms).....	6098	79	Condenser (.5 mfd.).....	30-4015
13	Condenser (250 mmfd.).....	30-1032	80	Vibrator Choke.....	32-1474
14	Padder.....	30-6012	81	Condenser (.5 mfd.).....	30-4047
15	Oscillator Transformer.....	32-1222	82	"A" Choke.....	32-1493
16	Padder (Pri. 1st I. F. trans.).....		83	Condenser (250 mmfd.).....	32-1493
17	Resistor (15,000 ohms).....	6208	84	Vibrator.....	38-5036
18	First I. F. Transformer.....	32-1471	85	Condenser (.02 mfd.).....	30-4039
19	Padder (Sec. 1st I. F. trans.).....		86	Resistor (200 ohms).....	7217
20	Resistor (1,000,000 ohms).....	33-1096	87	Resistor (200 ohms).....	7217
21	Condenser (.03 mfd.).....	30-4025	88	Condenser (1250 mmfd.).....	5886
22	Resistor (500,000 ohms).....	6097	89	Power Transformer.....	32-7098
23	Condenser (.5 mfd.).....	30-4058	90	Condenser (.01 mfd.).....	30-4051
24	Resistor (700 ohms).....	6443	91	Filter Condenser (4-8 mfd.).....	30-2015
25	Padder (Pri. 2nd I. F. trans.).....		92	"B" Choke.....	32-7104
26	Second I. F. Transformer.....	32-1449	93	Spark Plug Resistors.....	33-1015
27	Padder (Sec. 2nd I. F. trans.).....		94	Distributor Resistor.....	33-1113E
28	Condenser (110 mmfd.).....	30-1031	95	Screw Type Resistor.....	4851
29	Resistor (100,000 ohms).....	6099	96	Interference Condenser.....	30-4007
30	Condenser (110 mmfd.).....	30-1031	97	Studs.....	28-6036
31	Condenser (.006 mfd.).....	30-4125	98	Nuts (Mounting).....	W55A
32	Resistor (2,000,000 ohms).....	33-1025	99	Battery Cable.....	38-5296
33	Volume control & switch assembly.....	38-5851	100	Antenna Lead.....	38-5131
34	Resistor (25,000 ohms).....	33-1013	101	Acorn Nut.....	W821
35	Condenser (.02 mfd.).....	30-4215	102	Fuse.....	7227
36	Resistor (250,000 ohms).....	33-1097	103	Fuse Insulator.....	27-7131
37	Resistor (250,000 ohms).....	33-1097	104	Control Assembly.....	42-5185
38	Condenser (110 mmfd.).....	30-1031	105	Bracket.....	6035
39	Condenser (.01 mfd.).....	30-4145	106	Strap.....	04344
40	Resistor (250,000 ohms).....	33-1097	107	Knob.....	27-4058
41	Resistor (25,000 ohms).....	33-1013	108	Knob Spring.....	28-1738
42	Condenser (.25 mfd.).....	30-4135	109	Glass.....	27-7325
43	Resistor (500,000 ohms).....	6097	110	Glass Gasket.....	27-7500
44	Condenser (10 mfd.).....	30-4135	111	Pointer.....	28-1957
45	Resistor (2500 ohms).....	33-1100	112	Shaft.....	28-8206
46	Input Transformer.....	32-7206	113	Face Assembly.....	42-5191
47	Condenser (.002 mfd.).....	30-4177	114	Cover.....	29-7064
48	Output Transformer.....	32-7205	115	4-prong Socket.....	27-6006
49	Cone & Voice Coil.....	36-3159	116	5-prong Socket.....	27-6014
50	Field Coil Assembly.....	09705	117	6-prong Socket.....	27-6020
51			118	7-prong Socket.....	27-6020

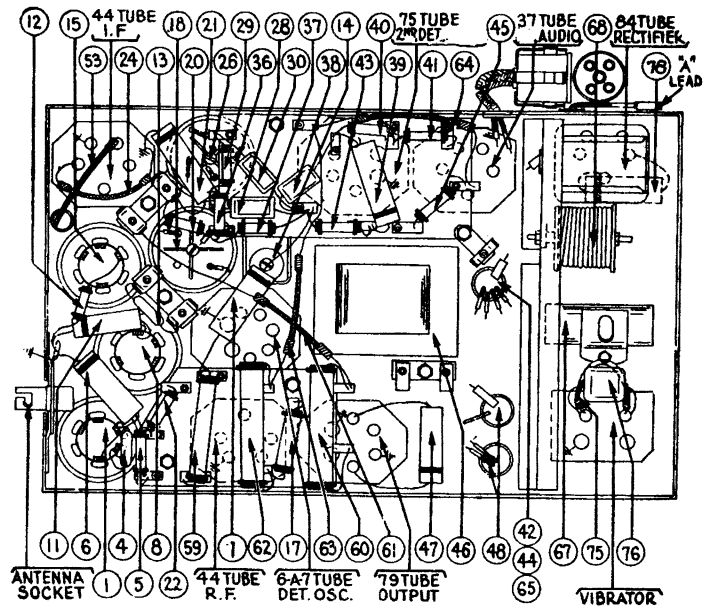
MODEL 802 (Auto Radio)



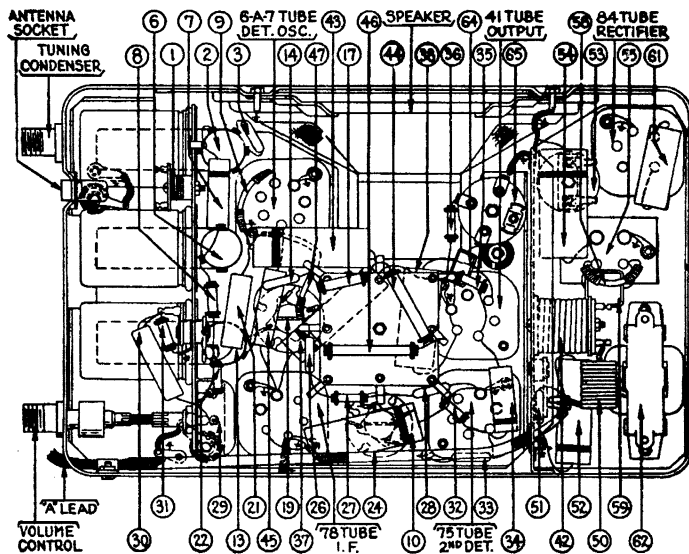
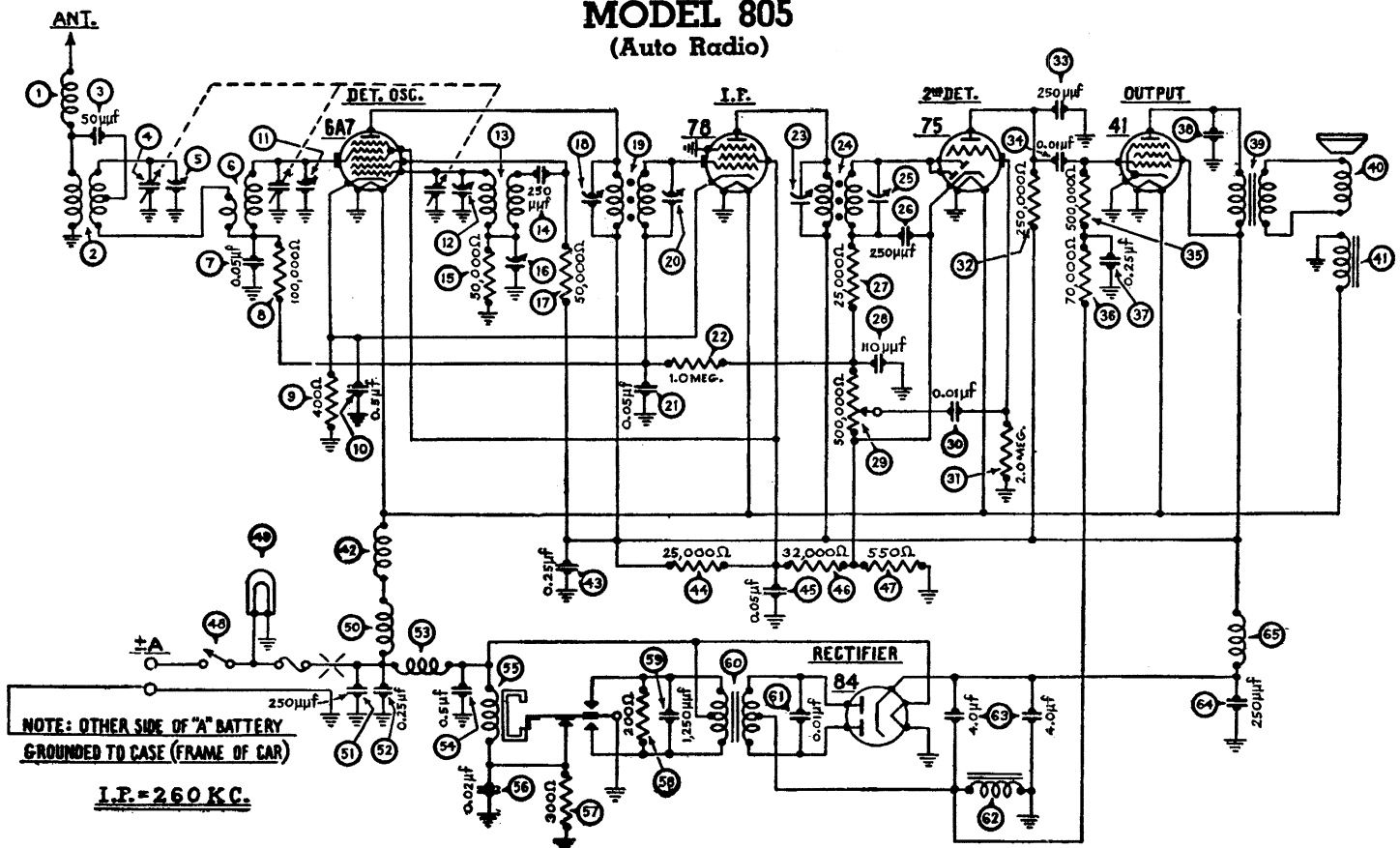
PARTS LIST

No.	Description	Part No.	No.	Description	Part No.
1	Antenna Transformer	32-1462	45	Resistor (2500 ohms)	33-1100
2	Tuning Condenser	31-1202	46	Input Transformer	32-7206
3	First Padder (on tun. cond.)	30-1029	47	Condenser (4000 mmfd.)	30-4185
4	Condenser (50 mmfd.)	30-1029	48	Output Transformer	32-7205
5	Resistor (100,000 ohms)	6099	49	Condenser (250 mmfd.)	30-1032
6	Condenser (.03 mfd.)	30-4025	50	Cone & Voice Coil	36-8159
7	Condenser (.05 mfd.)	30-4020	51	Pilot Lamp	34-2040
8	R. F. Transformer	32-1463	52	Condenser (50 mmfd.)	30-1029
9	Second Padder (on tun. cond.)	30-1029	53	Resistor (7 ohms)	33-3130
10	Third Padder (on tun. cond.)	30-1029	54	Field Coil Assembly	02795
11	Condenser (.03 mfd.)	30-4025	55	Condenser (250 mmfd.)	30-1032
12	Resistor (50,000 ohms)	6098	56	Choke	32-1464
13	Condensers (250 mmfd.)	3082	57	Tone Control	30-4208
14	Padder	31-6012	58	Condenser (.25 mfd.)	30-4134
15	Oscillator Transformer	32-1222	59	Resistor (51,000 ohms)	4237
16	Padder (Pri. 1st I. F. Trans.)	30-1029	60	Resistor (5000 ohms)	33-1070
17	Resistor (15,000 ohms)	6208	61	Resistor (100 ohms)	33-3023
18	First I. F. Transformer	32-1471	62	Resistor (37,000 ohms)	33-1098
19	Padder (Sec. 1st I. F. Trans.)	30-1029	63	Resistor (150 ohms)	33-3045
20	Resistor (1,000,000 ohms)	33-1096	64	Resistor (150 ohms)	33-3045
21	Condenser (.03 mfd.)	30-4025	65	Condenser (8 mfd.)	30-4135
22	Resistor (500,000 ohms)	6097	66	Condenser (.5 mfd.)	30-4018
23	Condenser (.5 mfd.)	30-4058	67	Condenser (.5 mfd.)	30-4015
24	Resistor (500 ohms)	6977	68	Vibrator Choke	32-1474
25	Padder (Pri. 2nd I. F. Trans.)	30-1029	69	Condenser (.5 mfd.)	30-4047
26	Second I. F. Transformer	32-1449	70	Interference Filter	32-1466
27	Padder (Sec. 2nd I. F. Trans.)	30-1029	71	Interference Filter	32-1466
28	Condenser (110 mmfd.)	30-1031	72	Vibrator	38-5036
29	Resistor (100,000 ohms)	6099	73	Condenser (.02 mfd.)	30-4039
30	Condenser (250 mmfd.)	30-1032	74	Resistor (300 ohms)	33-3010
31	Condenser (6000 mmfd.)	30-4125	75	Resistor (200 ohms)	7217
32	Resistor (2,000,000 ohms)	33-1025	76	Condenser (1250 mmfd.)	5886
33	Vol. Cont. & Sw. Assembly	38-5851	77	Power Transformer	32-7098
34	Resistor (20,000 ohms)	33-1130	78	Condenser (.91 mfd.)	30-4051
35	Condenser (.02 mfd.)	30-4215	79	Filter Condenser (4-8 mfd.)	30-2015
36	Resistor (250,000 ohms)	33-1097	80	"B" Choke	32-7104
37	Resistor (250,000 ohms)	33-1097		Control Assembly	42-5256
38	Condenser (250 mmfd.)	30-1032		Flexible Shafts	28-8206
39	Condenser (.01 mfd.)	30-4145		Glass	27-7325
40	Resistor (250,000 ohms)	33-1097		Face Assembly	42-5255
41	Resistor (25,000 ohms)	33-1013		Pointer	28-1957
42	Condenser (.25 mfd.)	30-4135		Knob	27-4058
43	Resistor (500,000 ohms)	6097		Fuse	7227
44	Padder	31-6012			

No.	Description	Part No.	No.	Description	Part No.
	"A" Lead	38-5296		Nuts (set mtg.)	W553
	Antenna Lead	38-5131		Bracket (Control mtg.)	603
	Speaker Cable	41-3112		Strap (control mtg.)	04344
	Studs (set mtg.)	28-6036		Radio Lock Switch	42-1076



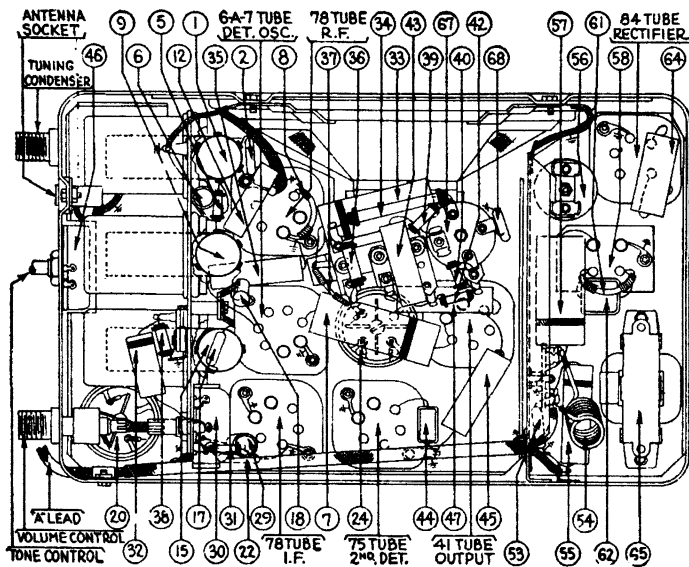
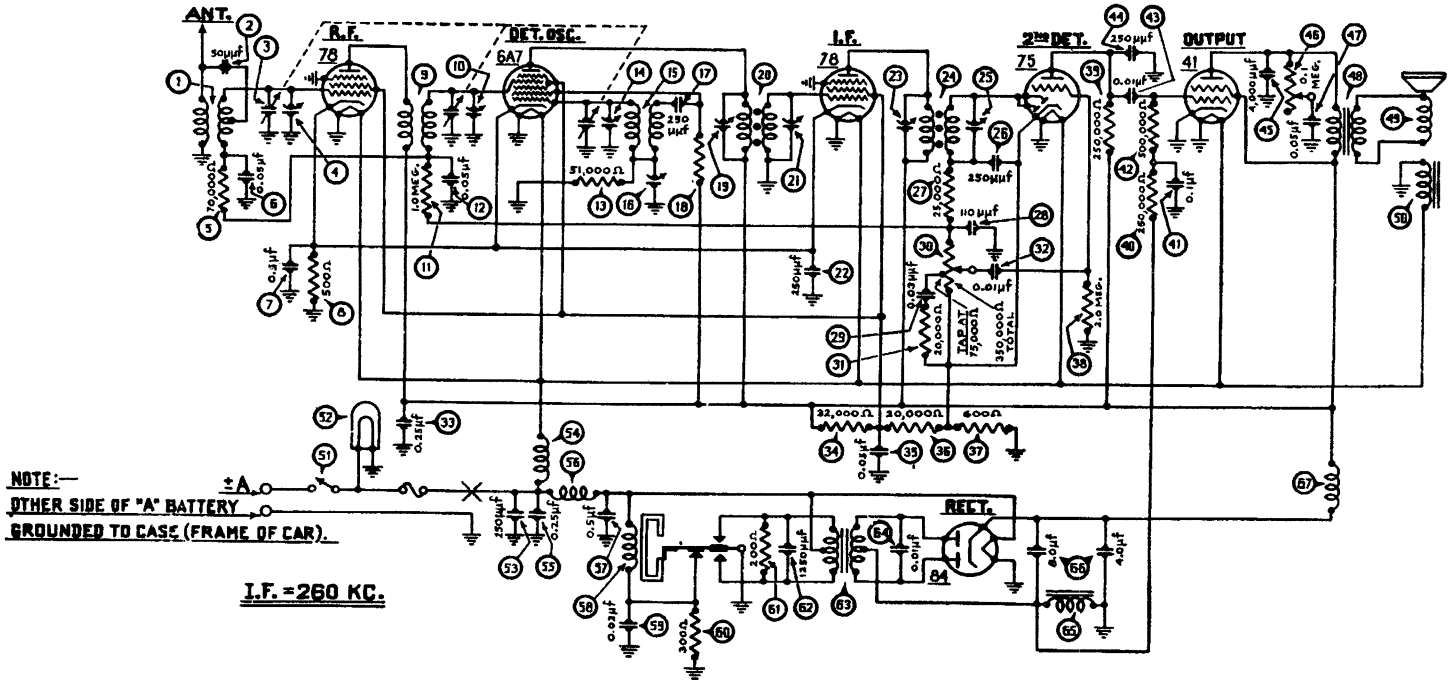
MODEL 805 (Auto Radio)



PARTS LIST

No.	Description	Part No.	No.	Description	Part No.
1	Antenna Choke	32-1372	44	Resistor (25,000 ohms)	3656
2	Antenna Transformer	32-1655	45	Condenser (.05 mfd.)	30-4020
3	Condenser (50 mmfd.)	4587	46	Resistor (32,000 ohms)	3525
4	Tuning Condenser	31-1483	47	Resistor (550 ohms)	33-3031
5	First Padder (on tun. cond.)	....	48	On-Off Switch Assembly	42-5336
6	R. F. Transformer	32-1656	49	Pilot Lamp	34-2039
7	Condenser (.05 mfd.)	30-4020	50	"A" Choke	32-1644
8	Resistor (100,000 ohms)	6099	51	Condenser (250 mmfd.)	30-1032
9	Resistor (400 ohms)	33-3016	52	Condenser (.25 mfd.)	30-4146
10	Condenser (.5 mfd.)	30-4227	53	Vibrator Choke	32-1625
11	Second Padder (on tun. cond.)	....	54	Condenser (.5 mfd.)	30-4227
12	Third Padder (on tun. cond.)	....	55	Vibrator	38-5036
13	Oscillator Transformer	32-1657	56	Condenser (.02 mfd.)	30-4039
14	Condenser (250 mmfd.)	30-1032	57	Resistor (300 ohms)	33-3010
15	Resistor (50,000 ohms)	33-1163	58	Resistor (200 ohms)	7217
16	Fourth Padder (on tun. cond.)	....	59	Condenser (1250 mmfd.)	5886
17	Resistor (50,000 ohms)	6098	60	Power Transformer	32-7352
18	Padder (Pri. 1st I. F. Transf.)	....	61	Condenser (.01 mfd.)	30-4051
19	First I. F. Transformer	32-1650	62	Filter Choke	32-7351
20	Padder (Sec. 1st I. F. Transf.)	....	63	Filter Condenser (4-4 mfd.)	30-2115
21	Condenser (.05 mfd.)	30-4020	64	Condenser (250 mmfd.)	30-1032
22	Resistor (1,000,000 ohms)	33-1096	65	"B" Choke	32-1281
23	Padder (Pri. 2nd I. F. Transf.)	....		Control Assembly	42-5331
24	Second I. F. Transformer	32-1651		Glass and Dial Assembly	27-7835
25	Padder (Sec. 2nd I. F. Transf.)	....		Pointer Assembly	42-5335
26	Condenser (250 mmfd.)	30-1032		Bezel Plate	28-7108
27	Resistor (25,000 ohms)	33-1013		Knobs	27-4187
28	Condenser (110 mmfd.)	30-1031		Keys	28-2782
29	Volume Control —			Control Mtg. Bracket (dash)	29-2773
30	(500,000 ohms)	38-6635		Control Mtg. Bracket	
31	Condenser (.01 mfd.)	30-4124		(steering)	6035
32	Resistor (2,000,000 ohms)	33-1025		Steering Mtg. Kit (28")	45-1133
33	Resistor (250,000 ohms)	33-1097		Studs (Set Mtg.)	28-6272
34	Condenser (250 mmfd.)	30-1032		Nuts (Set Mtg.)	W98A
35	Condenser (.01 mfd.)	30-4169		Spark Plug Resistor	33-1195
36	Resistor (500,000 ohms)	6097		Distributor Resistor	33-1196
37	Resistor (70,000 ohms)	33-1115		Interference Condenser	30-4007
38	Condenser (.25 mfd.)	30-4146		Fuse	7227
39	Condenser (8000 mmfd.)	30-4317		Fuse Insulator	27-7729
40	Output Transformer	32-7019		Antenna Lead	38-5131
41	Cone and Voice Coil	36-3406		Flexible Shaft (21")	28-8354
42	Field Coil Assembly	36-3405		Flexible Shaft (28")	28-8355
43	"A" Choke	32-1377		Lock Cylinder Assembly	42-5337

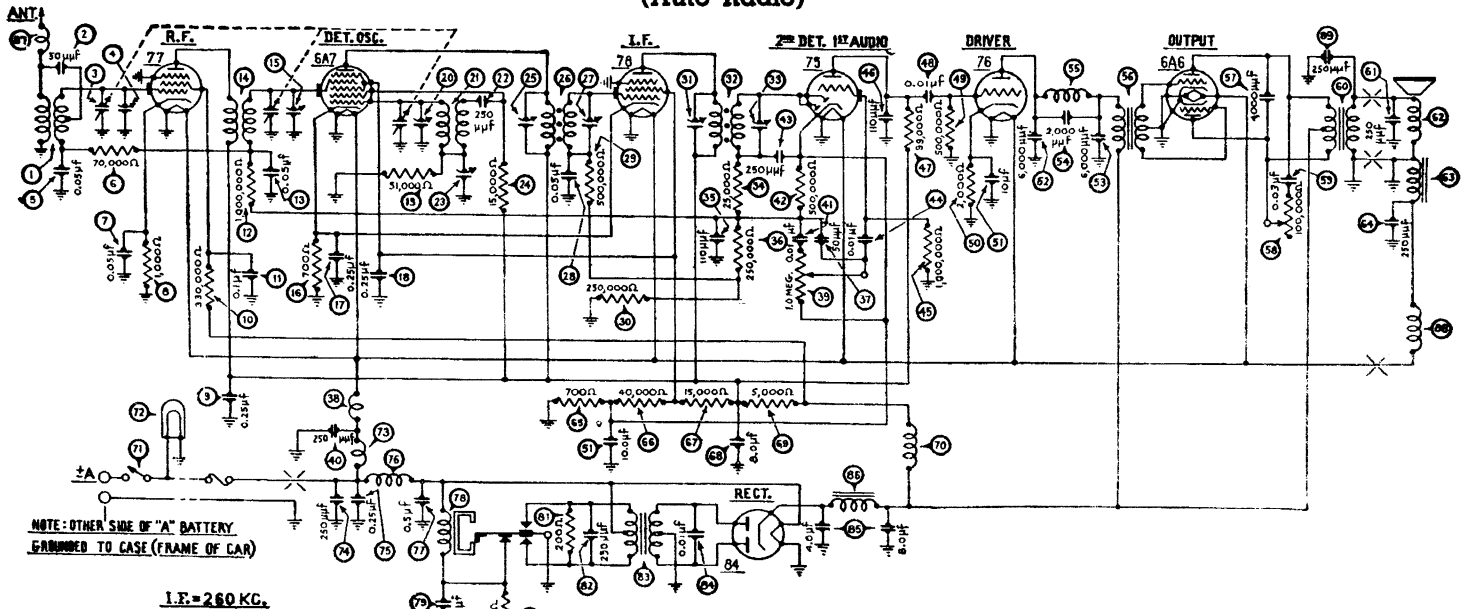
MODEL 806 (Auto Radio)



MODEL 806 PARTS LIST

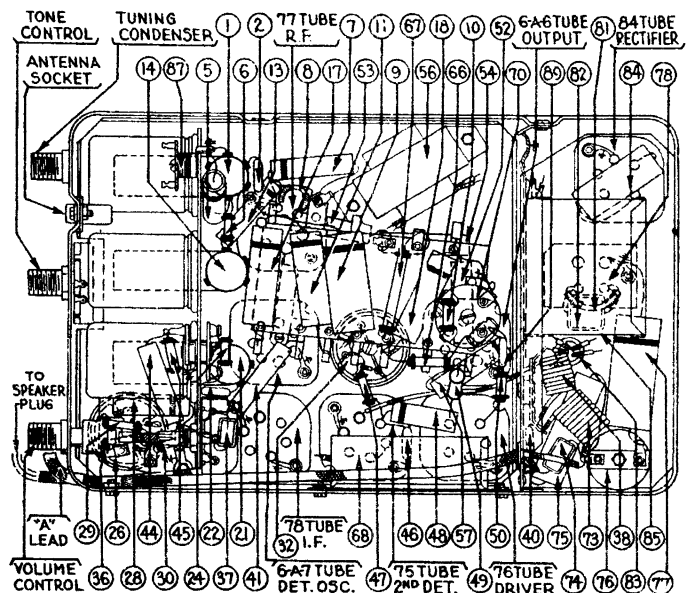
No. Shown on Schematic	Description	Part No.	No. Shown on Schematic	Description	Part No.
1	Antenna Transformer.....	32-1618	45	Condenser (4000 mmfd.).....	30-4185
2	Condenser (50 mmfd.).....	4587	46	Tone Control.....	33-5101
3	Tuning Condenser.....	31-1483	47	Condenser (.05 mfd.).....	30-4012
4	First Padder (on tun. cond.).....	32-7019	48	Output Transformer.....	32-7019
5	Resistor (70,000 ohms).....	33-1115	49	Cone & Voice Coil.....	36-3406
6	Condenser (.05 mfd.).....	30-4020	50	Field-coil Assembly.....	36-3405
7	Condenser (.5 mfd.).....	30-4227	51	"On" & "Off" Switch Assm.....	42-5336
8	Resistor (600 ohms).....	33-3209	52	Pilot Lamp.....	34-2039
9	R. F. Transformer.....	32-1619	53	Condenser (250 mmfd.).....	30-1032
10	Second Padder (on tun. cond.).....	32-1644	54	"A" Choke.....	32-1644
11	Resistor (1,600,000 ohms).....	33-1096	55	Condenser (.25 mfd.).....	30-4146
12	Condenser (.05 mfd.).....	30-4020	56	Vibrator Choke.....	32-1625
13	Resistor (51,000 ohms).....	6098	57	Condenser (.5 mfd.).....	30-4227
14	Third Padder (on tun. cond.).....	32-1620	58	Vibrator.....	38-5036
15	Oscillator Transformer.....	32-1620	59	Condenser (.02 mfd.).....	30-4039
16	Fourth Padder (on tun. cond.).....	32-1621	60	Resistor (300 ohms).....	33-3010
17	Condenser (250 mmfd.).....	30-1032	61	Resistor (200 ohms).....	7217
18	Resistor (51,000 ohms).....	33-1163	62	Condenser (1250 mmfd.).....	5886
19	Padder (Pri. 1st I. F. Tran.).....	32-1621	63	Power Transformers.....	32-7352
20	First I. F. Transformer.....	32-1621	64	Condenser (.01 mfd.).....	30-4051
21	Padder (Sec. 1st I. F. Tran.).....	32-1622	65	Filter Choke.....	32-7351
22	Condenser (250 mmfd.).....	30-1032	66	Filter Condenser.....	30-2109
23	Padder (Pri. 2nd I. F. Tran.).....	32-1622	67	R. F. Choke.....	32-1348
24	Second I. F. Transformer.....	32-1622	68	Condenser (250 mmfd.).....	30-1032
25	Padder (Sec. 2nd I. F. Tran.).....	30-1032		Control Assembly.....	42-5331
26	Condenser (250 mmfd.).....	30-1032		Glass and Dial.....	27-7835
27	Resistor (25,000 ohms).....	33-1013		Pointer Assembly.....	42-5335
28	Condenser (110 mmfd.).....	30-1031		Bezel Plate.....	28-7108
29	Condenser (.03 mfd.).....	30-4025		Knobs.....	27-4187
30	Vol. Con. & Coupling Assm.....	38-6605		Control Mounting Bracket.....	29-2773
31	Resistor (20,000 ohms).....	33-1178		Keys.....	28-2782
32	Condenser (.01 mfd.).....	30-4169		Studs (Set Mtg.).....	28-6272
33	Condenser (.25 mfd.).....	30-4134		Nuts (Set Mtg.).....	W98A
34	Resistor (32,000 ohms).....	3525		Spark Plug Resistors.....	33-1195
35	Condenser (.05 mfd.).....	30-4020		Distributor Resistor.....	33-1196
36	Resistor (20,000 ohms).....	6650		Interference Condensers.....	30-4007
37	Resistor (600 ohms).....	33-3207		Fuse.....	7227
38	Resistor (2,000,000 ohms).....	33-1025		Fuse Insulator.....	27-7729
39	Resistor (250,000 ohms).....	33-1097		Antenna Lead.....	38-5131
40	Resistor (250,000 ohms).....	33-1007		Flexible Shaft (21").....	28-8354
41	Condenser (.1 mfd.).....	30-4122		Flexible Shaft (28").....	28-8355
42	Resistor (500,000 ohms).....	6097		Lock Cylinder Assembly.....	42-5337
43	Condenser (.01 mfd.).....	30-4145		28" Shaft Kit.....	45-1133
44	Condenser (250 mmfd.).....	30-1032			

MODEL 808 (Auto Radio)



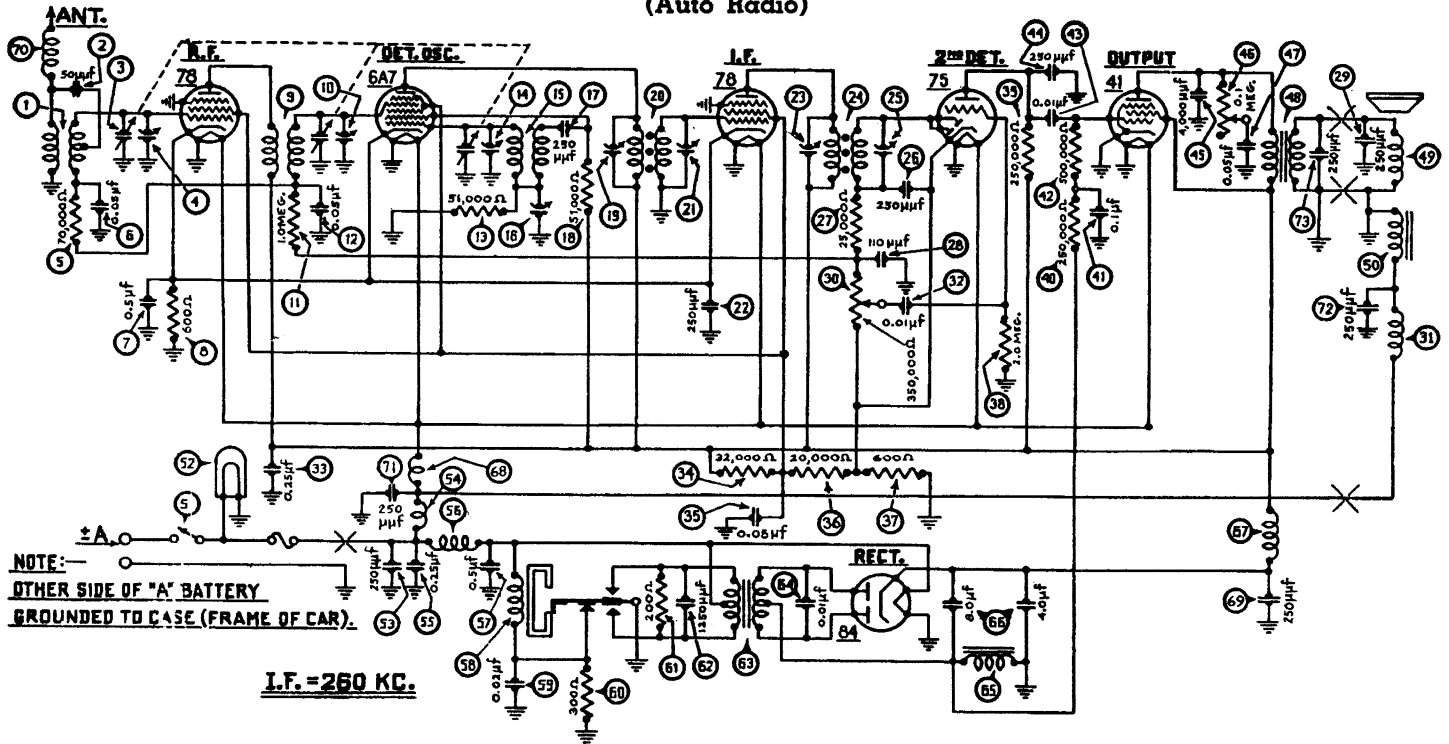
PARTS LIST

No.	Description	Part No.	No.	Description	Part No.
1	Antenna Transformer	32-1618	43	Condenser (250 mmfd.)	30-1032
2	Condenser (50 mmfd.)	30-1029	44	Condenser (.01 mfd.)	30-4124
3	Tuning Condenser	31-1483	45	Resistor (1,000,000 ohms)	33-1096
4	First Padder (on tun. cond.)		46	Condenser (110 mmfd.)	30-1031
5	Condenser (.05 mfd.)	30-4020	47	Resistor (99,000 ohms)	6099
6	Resistor (70,000 ohms)	33-1115	48	Condenser (.01 mfd.)	30-4169
7	Condenser (.05 mfd.)	30-4020	49	Resistor (500,000 ohms)	6097
8	Resistor (1000 ohms)	33-3017	50	Resistor (2000 ohms)	33-1029
9	Condenser (.25 mfd.)	30-4134	51	Condenser (10 --- 10 mfd.)	30-2076
10	Resistor (330,000 ohms)	33-1200	52	Condenser (6000 mmfd.)	30-4125
11	Condenser 7.1 mfd.)	30-4170	53	Condenser (6000 mmfd.)	30-4125
12	Resistor (1,000,000 ohms)	33-1096	54	Condenser (2000 mmfd.)	30-4177
13	Condenser (.05 mfd.)	30-4020	55	Choke	32-1281
14	R. F. Transformer	32-1619	56	Input Transformer	32-7356
15	Second Padder (on tun. cond.)		57	Condenser (4000 mmfd.)	30-4185
16	Resistor (700 ohms)	6443	58	Tone Control (100,000 ohms)	33-5096
17	Condenser (.25 mfd.)	30-4146	59	Condenser (.05 mfd.)	30-4025
18	Condenser (.25 mfd.)	30-4146	60	Output Transformer	32-7355
19	Resistor (51,000 ohms)	4518	61	Condenser (250 mmfd.)	30-1032
20	Third Padder (on tun. cond.)		62	Cone and Voice Coil	36-3159
21	Oscillator Transformer	32-1620	63	Field Coil Assembly	36-3454
22	Condenser (250 mmfd.)	30-1032	64	Condenser (250 mmfd.)	30-1032
23	Fourth Padder (on tun. cond.)		65	Resistor (700 ohms)	6443
24	Resistor (15,000 ohms)	33-1177	66	Resistor (40,000 ohms)	33-1044
25	Padder (Pri. 1st I. F. Transf.)		67	Resistor (15,000 ohms)	5278
26	First I. F. Transformer	32-1621	68	Condenser (8 mfd.)	30-2110
27	Padder (Sec. 1st I. F. Transf.)		69	Resistor (5000 ohms)	3526
28	Condenser (.05 mfd.)	30-4020	70	R. F. Choke	32-7368
29	Resistor (500,000 ohms)	6097	71	On and Off Switch	42-5336
30	Resistor (250,000 ohms)	33-1097	72	Pilot Lamp	34-2039
31	Padder (Pri. 2nd I. F. Transf.)		73	"A" Choke	32-1644
32	Second I. F. Transformer	32-1630	74	Condenser (250 mmfd.)	30-1032
33	Padder (Sec. 2nd I. F. Transf.)		75	Condenser (.25 mfd.)	30-4146
34	Resistor (25,000 ohms)	33-1013	76	Vibrator Choke	32-1607
35	Condenser (110 mmfd.)	30-1031	77	Condenser (.5 mfd.)	30-4227
36	Resistor (250,000 ohms)	33-1097	78	Vibrator	38-5036
37	Condenser (50 mmfd.)	30-1029	79	Condenser (.02 mfd.)	30-4039
38	"A" Choke	32-1438	80	Resistor (300 ohms)	33-3010
39	Volume Control (1,000,000 ohms)	38-6636	81	Resistor (200 ohms)	7217
40	Condenser (250 mmfd.)	30-1032	82	Condenser (1250 mmfd.)	5886
41	Condenser (.01 mfd.)	30-4124	83	Power Transformer	32-7352
42	Resistor (500,000 ohms)	6097	84	Condenser (.01 mfd.)	30-4051



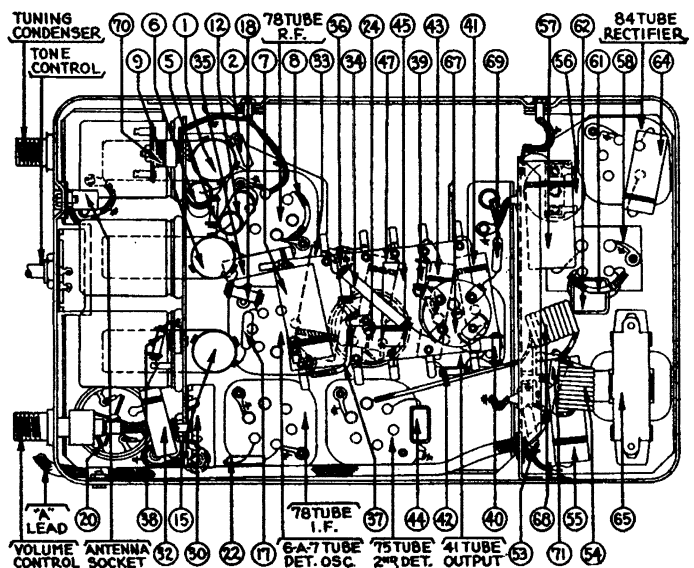
No.	Description	Part No.	No.	Description	Part No.
85	Filter Condenser (4-8 mfd.)	30-2112	112	Stud (speaker mtg.)	6122
86	Filter Choke	32-7104		Nut (speaker mtg.)	W55A
87	Antenna Choke	32-1673		Spark Plug Resistors	33-1195
88	Choke	32-1464		Distributor Resistor	33-1196
89	Condenser (250 mmfd.)	30-1032		Interference Condenser	30-4007
90	Control Assembly	42-5332		Fuse	7227
	Glass and Dial	27-7835		Fuse Insulator	27-7729
	Pointer Assembly	42-5335		Antenna Lead	38-6131
	Bezel Plate	28-7108		Lock Cylinder Assembly	42-5337
	Knobs (Tuning Volume)	27-4187		Control Shaft 21"	28-8354
	Knob (Tone)	27-4188		Control Shaft 28"	28-8355
	Control mtg. Bracket (Dash)	29-2773		Tone Control Shaft (21")	28-8356
	Control mtg. Bracket (Steering)	6035		Tone Control Shaft (28")	28-8358
	Strap	04344		Lock Springs	28-8359
	Strap Pad	6206		Tone Control Mtg. Bracket	29-2820
	Keys	28-2782			
	Studs (set mtg.)	28-6298			
	Nuts (set mtg.)	W98A			

MODEL 809 (Auto Radio)

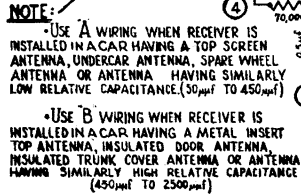


PARTS LIST

1 Antenna Transformer .....32-1618	49 Cone & Voice Coil .....36-3159
2 Condenser (50 mmfd.) .....4587	50 Field-coil Assembly .....02795
3 Tuning Condenser .....31-1483	51 "On" & "Off" Switch Assm. 42-5336
4 First Padder (on tun. cond.)	52 Pilot Lamp .....34-2039
5 Resistor (70,000 ohms) .....33-1115	53 Condenser (250 mmfd.) .....30-1032
6 Condenser (.05 mfd.) .....30-4020	54 "A" Choke .....32-1644
7 Condenser (.5 mfd.) .....30-4227	55 Condenser (.25 mfd.) .....30-4146
8 Resistor (600 ohms) .....33-3209	56 Vibrator Choke .....32-1377
9 R. F. Transformer .....32-1619	57 Condenser (.5 mfd.) .....30-4227
10 Second Padder (on tun. cond.)	58 Vibrator .....38-5036
11 Resistor (1,000,000 ohms) .....33-1096	59 Condenser (.02 mfd.) .....30-4039
12 Condenser (.05 mfd.) .....30-4020	60 Resistor (300 ohms) .....32-3010
13 Resistor (51,000 ohms) .....6098	61 Resistor (200 ohms) .....7217
14 Third Padder (on tun. cond.)	62 Condenser (1250 mmfd.) .....5886
15 Oscillator Transformer .....32-1620	63 Power Transformer .....32-7352
16 Fourth Padder (on tun. cond.)	64 Condenser (.01 mfd.) .....30-4051
17 Condenser (250 mmfd.) .....30-1032	65 Filter Choke .....32-7351
18 Resistor (51,000 ohms) .....33-1163	66 Filter Condenser .....30-2109
19 Padder (Pri. 1st I. F. Tran.)	67 R. F. Choke .....32-1348
20 First I. F. Transformer .....32-1621	68 "A" Choke .....32-1438
21 Padder (Sec. 1st I. F. Tran.)	69 Condenser (250 mmfd.) .....30-1032
22 Condenser (250 mmfd.) .....30-1032	70 Antenna Choke .....32-1637
23 Padder (Pri. 2nd I. F. Tran.)	71 Condenser (250 mmfd.) .....30-1032
24 Second I. F. Transformer .....32-1622	72 Condenser (250 mmfd.) .....30-1032
25 Padder (Sec. 2nd I. F. Tran.)	73 Condenser (250 mmfd.) .....30-1032
26 Condenser (250 mmfd.) .....30-1032	74 Control Assembly .....42-5332
27 Resistor (25,000 ohms) .....33-1013	75 Glass and Dial .....27-7835
28 Condenser (110 mmfd.) .....30-1031	76 Pointer Assembly .....42-5335
29 Condenser (250 mmfd.) .....30-1032	77 Bezel Plate .....28-7108
30 Vol. Con. & Coupling Assm. 38-6605	78 Knobs (Tuning-Volume) .....27-4187
31 Choke .....32-1464	79 Knob (Tone Control) .....27-4052
32 Condenser (.01 mfd.) .....30-4169	80 Stud (Spkr Mtg.) .....6122
33 Condenser (.25 mfd.) .....30-4134	81 Control Mounting Bracket .29-2773
34 Resistor (32,000 ohms) .....3525	82 Keys .....28-2782
35 Condenser (.05 mfd.) .....30-4020	83 Studs (Set Mtg.) .....28-6298
36 Resistor (20,000 ohms) .....6650	84 Nuts (Set Mtg.) .....W98A
37 Resistor (600 ohms) .....33-3207	85 Spark Plug Resistors .....33-1195
38 Resistor (2,000,000 ohms) .33-1025	86 Distributor Resistor .....33-1196
39 Resistor (250,000 ohms) .....33-1097	87 Interference Condensers ...30-4007
40 Resistor (250,000 ohms) .....33-1097	88 Fuse .....7217
41 Condenser (.1 mfd.) .....30-4122	89 Fuse Insulator .....27-7729
42 Resistor (500,000 ohms) .....6097	90 Antenna Lead .....38-5131
43 Condenser (.01 mfd.) .....30-4145	91 Flexible Shaft (21") .....28-8334
44 Condenser (250 mmfd.) .....30-1032	92 Flexible Shaft (28") .....28-8355
45 Condenser (4000 mmfd.) .....30-4185	93 Tone Control Shaft (21") .28-8356
46 Tone Control .....33-5101	94 Tone Control Shaft (28") .28-8358
47 Condenser (.05 mfd.) .....30-4012	95 Lock Cylinder Assembly ....42-5337
48 Output Transformer .....2598	96 28" Shaft Kit .....45-1133

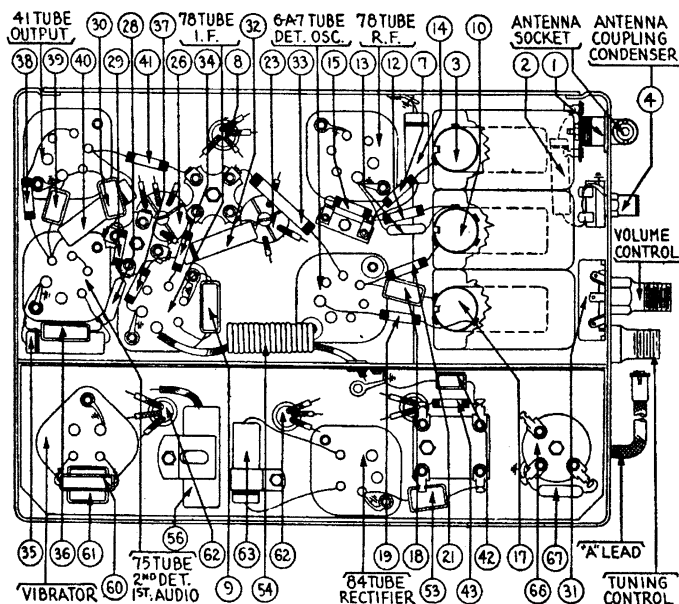


(Auto Radio)



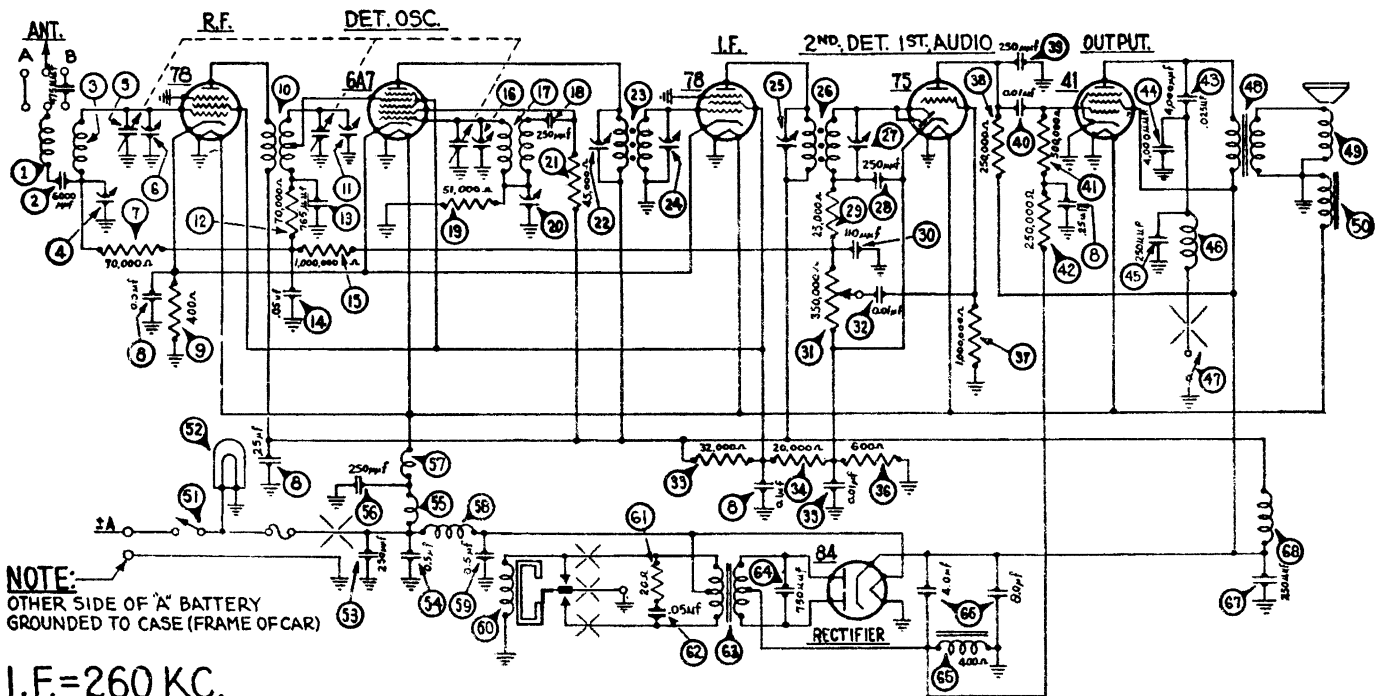
MODEL 816 PARTS LIST

No.	Description	Part No.	No.	Description	Part No.
①	Antenna Choke	38-7516	④⑧	"On" and "Off" Switch	42-1160
②	Condenser (6000 mmfd.)	30-4125	④⑨	Pilot Lamp	34-2039
③	Antenna Transformer	32-1984	⑤①	Condenser (450 mmfd.)	31-6065
④	Antenna Coupling Condenser	31-6082	⑤②	Condenser (.25 mfd.)	30-4146
⑤	Tuning Condenser	31-1767	⑤③	"A" Choke	32-1464
⑥	First Padder (on Tun. Cond.)		⑤④	Condenser (250 mmfd.)	30-1032
⑦	Resistor (70,000 ohms)	33-370334	⑤⑤	Filament Choke	32-1930
⑧	Condenser (.1-25-.25-5 mfd.)	30-4374	⑤⑥	Vibrator Choke	32-1968
⑨	Resistor (400 ohms)	33-1211	⑤⑦	Condenser (.5 mfd.)	30-4047
⑩	R. F. Transformer	32-1985	⑤⑧	Vibrator	38-5036
⑪	Second Padder (on Tun. Cond.)		⑤⑨	Condenser (.02 mfd.)	30-4039
⑫	Resistor (70,000 ohms)	33-370334	⑤⑩	Resistor (300 ohms)	33-3130
⑬	Condenser (.765 mmfd.)	30-1069	⑤⑪	Resistor (200 ohms)	33-3120
⑭	Condenser (.05 mfd.)	30-4020	⑤⑫	Condenser (1250 mmfd.)	5-6886
⑮	Resistor (1,000,000 ohms)	33-510344	⑤⑬	Power Transformer	32-7482
⑯	Third Padder (on Tun. Cond.)		⑤⑭	Condenser (.01 mfd.)	30-4381
⑰	Oscillator Transformer	32-1986	⑤⑮	Filter Choke	32-7491
⑱	Condenser (250 mmfd.)	30-1032	⑤⑯	Filter Condenser (4-4 mfd.)	30-2145
⑲	Resistor (51,000 ohms)	33-351344	⑤⑰	R. F. Choke	30-1932
⑳	Low Frequency Padder	31-6083	⑤⑱	Condenser (250 mmfd.)	30-4042
㉑	Resistor (45,000 ohms)	33-345344	⑤㉑	Four Prong Socket	27-6044
㉒	Padder (Pri. 1st I. F. Trans.)		⑤㉒	Five Prong Socket	27-6035
㉓	First I. F. Transformer	32-1928	⑤㉓	Six Prong Socket	27-6036
㉔	Padder (Sec. 1st I. F. Trans.)		⑤㉔	Seven Prong Socket	27-6037
㉕	Padder (Pri. 2nd I. F. Trans.)		⑤㉕	Clamps (Speaker Mtg.)	29-3131
㉖	Second I. F. Transformer	32-1929	⑤㉖	Speaker Cable	41-3180
㉗	Padder (Sec. 2nd I. F. Trans.)		⑤㉗	Control Assembly (816)	42-5534
㉘	Condenser (250 mmfd.)	30-1032	⑤㉘	Scale Assembly	42-5539
㉙	Resistor (25,000 ohms)	33-325344		Interference Condenser	
㉚	Condenser (110 mmfd.)	30-1031		(½ mfd.)	30-4007
㉛	Volume Control (350,000 ohms)	33-5148	⑤㉙	Distributor Resistor	33-1196
㉜	Condenser (.01 mfd.)	30-4124	⑤㉚	Tuning and Volume Shaft	28-8435
㉝	Resistor (32,000 ohms)	33-332433	⑤㉛	Tee Bolt (Receiver Mtg.)	28-6161
㉞	Resistor (20,000 ohms)	33-320334	⑤㉜	Nuts (Receiver Mtg.)	W58A
㉟	Condenser (.01 mfd.)	30-4124	⑤㉝	Bracket (Control Mtg.)	29-3711
㊱	Resistor (600 ohms)	33-1212	⑤㉞	Fuse	7227
㊲	Resistor (1,000,000 ohms)	33-510344	⑤㉟	Fuse Insulator	27-7729
㊳	Resistor (250,000 ohms)	33-243434	⑤㊱	Antenna Loom Assembly	
㊴	Condenser (250 mmfd.)	30-1032	⑤㊲	(816)	41-3191
㊵	Condenser (.01 mfd.)	30-4145	⑤㊳	Antenna Connector	29-6423
㊶	Resistor (500,000 ohms)	33-449344	⑤㊴	Antenna Connector Insulator	27-8199
㊷	Condenser (250 mmfd.)	30-1032	⑤㊵	Condenser Plug	30-4412
㊸	Resistor (250,000 ohms)	33-243434	⑤㊶	Control Assembly (816B-C)	42-5561
㊹	Condenser (4000 mmfd.)	30-4185	⑤㊷	Control Assembly (816P)	42-5562
㊺	Output Transformer	32-7495	⑤㊸	Scale Assembly (816B-C)	42-5570
㊻	Cone and Voice Coil	36-3526	⑤㊹	Scale Assembly (816P)	42-5540
㊼	Field Coil Assembly	32-9236	⑤㊺	Knob (816P)	27-4299
			⑤㊻	Knob (816-816B-C)	27-4288
			⑤㊼	Knob Base	28-3698



MODEL 817

(Auto Radio)

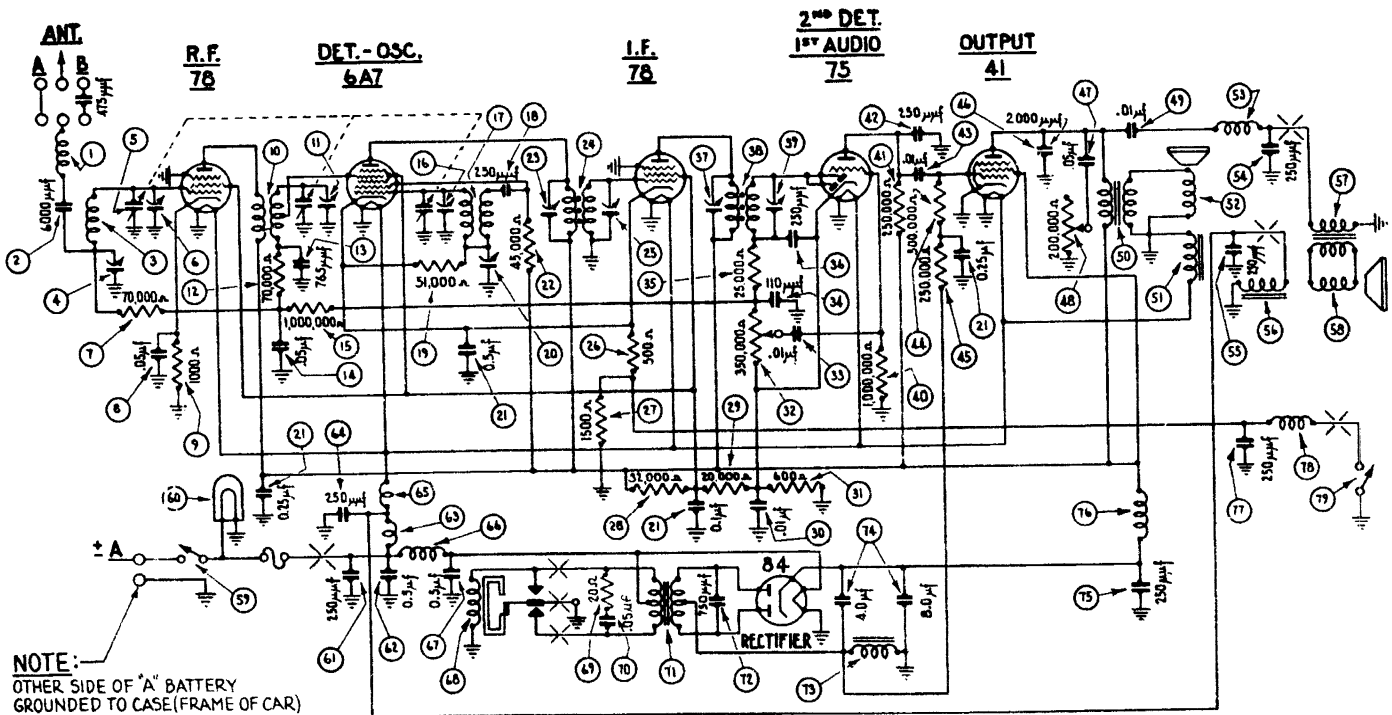


MODEL 817 — PARTS LIST

No.	Description	Part No.	No.	Description	Part No.
1	Antenna Choke	38-7516	44	Condenser (.0001 mfd.)	30-4185
2	Condenser (6,000 mmfd.)	30-4125	45	Condenser (.250 mmfd.)	30-1032
3	Antenna Transformer	32-1984	46	Choke	32-2063
4	Antenna Coupling Condenser	31-6082	47	Tone Control Switch	42-1160
5	Tuning Condenser	31-1769	48	Output Transformer	32-7495
6	First Padder (on tun. cond.)	33-370334	49	Cone and Voice Coil	36-3586
7	Resistor (70,000 ohms)	33-370334	50	Field Coil Assembly	36-3597
8	Condenser		51	"On and Off Switch"	42-1160
9	(.1-.25-.25-.5 mfd.)	30-4415	52	Pilot Lamp	34-2039
10	Resistor (400 ohms)	33-1211	53	Condenser (.250 mmfd.)	30-1032
11	R. F. Transformer	32-1985	54	Condenser (.5 mfd.)	30-4015
12	Second Padder (on tun. cond.)	33-370334	55	"A" Choke	32-1432
13	Resistor (70,000 ohms)	33-370334	56	Condenser (.250 mmfd.)	30-1032
14	Condenser (765 mmfd.)	30-1069	57	Filament Choke	32-2038
15	Condenser (.05 mfd.)	33-615-0SG	58	Vibrator Choke	32-2039
16	Resistor (1,000,000 ohms)	33-510344	59	Condenser (.5 mfd.)	30-4015
17	Third Padder (on tun. cond.)	33-1986	60	Vibrator	41-3170D
18	Oscillator Transformer	32-1986	61	Resistor (20 ohms)	33-020133
19	Condenser (250 mmfd.)	30-1032	62	Condenser (.05 mfd.)	30-40208
20	Resistor (51,000 ohms)	33-351344	63	Power Transformer	32-7550
21	Low Frequency Padder	33-6083	64	Condenser (750 mmfd.)	30-4420
22	Resistor (45,000 ohms)	33-345344	65	Filter Choke	32-7545
23	Padder (Pri. 1st I. F. Trans.)	33-2026	66	Filter Condenser (4-8 mfd.)	30-2150
24	First I. F. Transformer	32-2026	67	Condenser (.250 mmfd.)	30-1032
25	Padder (Sec. 1st I. F. Trans.)	33-2027	68	"B" Choke	32-1281
26	Padder (Pri. 2nd I. F. Trans.)	33-2027	69	Four Prong Socket	27-6044
27	Second I. F. Transformer	32-2027	70	Five Prong Socket	27-6035
28	Padder (Sec. 2nd I. F. Trans.)	33-1032	71	Six Prong Socket	27-6036
29	Condenser (250 mmfd.)	30-1032	72	Seven Prong Socket	27-6037
30	Resistor (25,000 ohms)	33-325344	73	Control Assembly	42-5536
31	Condenser (.110 mmfd.)	30-1031	74	Knob	27-4288
32	Volume Control		75	Antenna Condenser	30-4412
33	(350,000 ohms)	33-5148	76	Connector Plug	29-6423
34	Condenser (.01 mfd.)	33-3903-0SU	77	Insulator	27-8199
35	Resistor (32,000 ohms)	33-32434	78	Fuse	7227
36	Resistor (20,000 ohms)	33-320334	79	Fuse Insulator	27-7729
37	Condenser (.01 mfd.)	33-3903-0SG	80	"Tee" Bolt (Rec. Mtg.)	28-6161
38	Resistor (600 ohms)	33-1212	81	Nut (Rec. Mtg.)	28-6161
39	Resistor (1,000,000 ohms)	33-510344	82	Speaker (Model CB)	36-1203
40	Resistor (250,000 ohms)	33-424344	83	Pilot Lamp Assembly	38-7213
41	Condenser (250 mmfd.)	30-1032	84	Dial Assembly	42-5539
42	Condenser (.01 mfd.)	33-3903-0SU	85	Tuning & Volume Shaft	28-8495
43	Resistor (500,000 ohms)	33-449344	86	Distributor Resistor	33-1196
44	Resistor (250,000 ohms)	33-424344	87	Interference Condenser	30-4007
45	Condenser (6,000 mmfd.)	30-4125			
46	Choke	32-2063			
47	Tone Control Switch	42-1160			
48	Output Transformer	32-7495			
49	Cone and Voice Coil	36-3586			
50	Field Coil Assembly	36-3597			
51	"On and Off Switch"	42-1160			
52	Pilot Lamp	34-2039			
53	Condenser (.250 mmfd.)	30-1032			
54	Condenser (.5 mfd.)	30-4015			
55	"A" Choke	32-1432			
56	Condenser (.250 mmfd.)	30-1032			
57	Filament Choke	32-2038			
58	Vibrator Choke	32-2039			
59	Condenser (.5 mfd.)	30-4015			
60	Vibrator	41-3170D			
61	Resistor (20 ohms)	33-020133			
62	Condenser (.05 mfd.)	30-40208			
63	Power Transformer	32-7550			
64	Condenser (750 mmfd.)	30-4420			
65	Filter Choke	32-7545			
66	Filter Condenser (4-8 mfd.)	30-2150			
67	Condenser (.250 mmfd.)	30-1032			
68	"B" Choke	32-1281			
69	Four Prong Socket	27-6044			
70	Five Prong Socket	27-6035			
71	Six Prong Socket	27-6036			
72	Seven Prong Socket	27-6037			
73	Control Assembly	42-5536			
74	Knob	27-4288			
75	Antenna Condenser	30-4412			
76	Connector Plug	29-6423			
77	Insulator	27-8199			
78	Fuse	7227			
79	Fuse Insulator	27-7729			
80	"Tee" Bolt (Rec. Mtg.)	28-6161			
81	Nut (Rec. Mtg.)	28-6161			
82	Speaker (Model CB)	36-1203			
83	Pilot Lamp Assembly	38-7213			
84	Dial Assembly	42-5539			
85	Tuning & Volume Shaft	28-8495			
86	Distributor Resistor	33-1196			
87	Interference Condenser	30-4007			

MODEL 818

(Auto Radio)

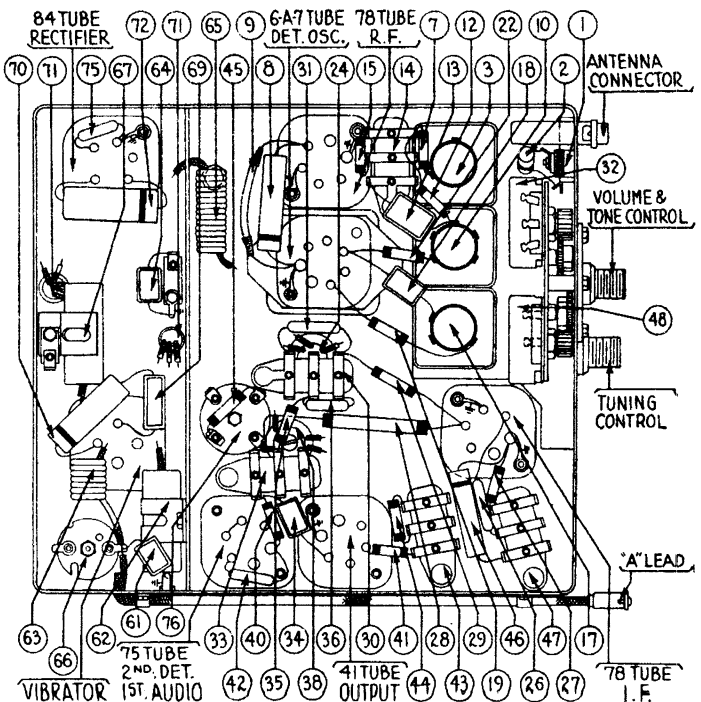


I F = 260 K.C.

NOTE: When the Receiver is installed in a car having a top antenna, under-car antenna, spare wheel antenna or antenna having a similarly low relative capacitance (50 mmf. to 450 mmf.) use connector plug in "A".
When the Receiver is installed in a car having a metal insert top antenna, insulated door antenna, insulated trunk cover antenna or antenna having similarly high relative capacitance (450 mmf. to 2500 mmf.) use condenser plug in "B".

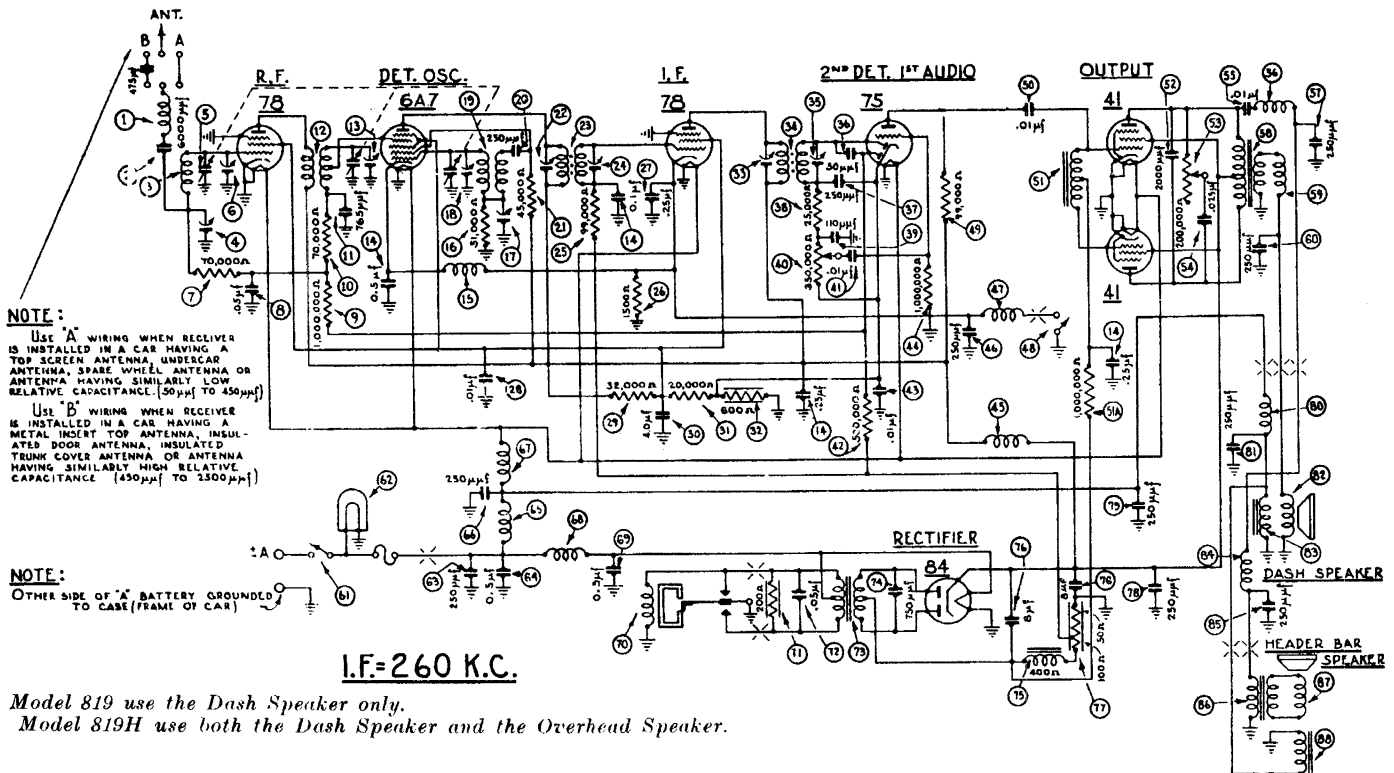
MODEL 818—PARTS LIST

No.	Description	Part No.	No.	Description	Part No.
1	Antenna Choke	38-7516	27	Control Assembly	28-5537
2	Condenser (.0000 mfd.)	30-41253	28	Tuning Control Shaft	28-8495
3	Antenna Transformer	32-1984	29	Volume Control Shaft	28-8499
4	Antenna Coupling Condenser	31-6082	30	Pilot Lamp Assembly	38-7213
5	Tuning Condenser	31-1769	31	Tuning and Volume Knob	27-4288
6	First Padder (on tun. cond.)	33-37033			
7	Resistor (70,000 ohms)	33-37033			
8	Condenser (.05 mfd.)	30-4020			
9	Resistor (1000 ohms)	33-3017			
10	R. F. Transformer	32-1985			
11	Second Padder (on tun. cond.)	33-37033			
12	Resistor (10,000 ohms)	33-37033			
13	Condenser (765 mmf.)	30-1069			
14	Condenser (.05 mfd.)	3615-086			
15	Resistor (1,000,000 ohms)	33-51034			
16	Third Padder (on tun. cond.)	33-37033			
17	Oscillator transformer	32-1986			
18	Condenser (250 mmf.)	30-1032			
19	Resistor (51,000 ohms)	33-35134			
20	Low Frequency Padder	31-6083			
21	Condenser (1-25-25-5 mfd.)	30-4415			
22	Resistor (45,000 ohms)	33-34534			
23	Padder (Pri. 1st I. F. Trans.)	33-37033			
24	First I. F. Transformer	32-2026			
25	Padder (Sec. 1st I. F. Trans.)	33-1213			
26	Resistor (500 ohms)	33-22034			
27	Resistor (2000 ohms)	33-32434			
28	Resistor (32,000 ohms)	33-32434			
29	Resistor (20,000 ohms)	33-32034			
30	Condenser (.01 mfd.)	3903-086			
31	Resistor (600 ohms)	33-1212			
32	Volume Control (350,000 ohms)	33-5149			
33	Condenser (.01 mfd.)	3903-086			
34	Condenser (.110 mfd.)	30-1031			
35	Resistor (25,000 ohms)	33-32344			
36	Condenser (250 mmf.)	30-1032			
37	Padder (Pri. 2nd I. F. Trans.)	33-37033			
38	Second I. F. Transformer	32-2027			
39	Padder (Sec. 2nd I. F. Trans.)	33-37033			
40	Resistor (1,000,000 ohms)	33-51034			
41	Resistor (250,000 ohms)	33-42434			
42	Condenser (250 mmf.)	30-1032			
43	Condenser (.01 mfd.)	3903-086			
44	Resistor (500,000 ohms)	33-44934			
45	Resistor (250,000 ohms)	33-42434			
46	Condenser (2000 mmf.)	30-1177			



No.	Description	Part No.	No.	Description	Part No.
47	Distributor Resistor	33-1196	72	Fuse	7227
48	Interference Cond. (.5 mfd.)	30-4007	73	Fuse Insulator	27-7729

MODEL 819 (Auto Radio)



Model 819 use the Dash Speaker only.
Model 819H use both the Dash Speaker and the Overhead Speaker.

MODELS 819 AND 819H—PARTS LIST

No.	Description	Part No.	No.	Description	Part No.	No.	Description	Part No.
1	Antenna Choke	38-7516	30	Resistor (20,000 ohms)	33-320333	61	Cone and Voice Coil (overhead speaker)	36-3526
2	Condenser (6000 mmfd.)	33-4125	31	Resistor (600 ohms)	33-1212	62	Field Coil Assembly (Overhead Speaker)	32-9236
3	Antenna Transformer	32-1984	32	Padder (Pri. 2nd I. F. Trans.)	33-2034	63	Four Prong Socket	27-6044
4	Antenna Coupling Condenser	31-6082	33	Second I. F. Transformer	32-2034	64	Five Prong Socket	27-6035
5	Tuning Condenser	31-1769	34	Padder (Sec. 2nd I. F. Trans.)	33-1029	65	Six Prong Socket	27-6036
6	First Padder (on tun. cond.)	33-370334	35	Condenser (50 mmfd.)	33-1032	66	Seven Prong Socket	27-6037
7	Resistor (70,000 ohms)	33-370334	36	Condenser (250 mmfd.)	33-1032	67	Idler Gear	28-7176
8	Condenser (.05 mfd.)	33-3615-OSG	37	Resistor (25,000 ohms)	33-325344	68	Pinion Gear	28-7178
9	Resistor (1,000,000 ohms)	33-510344	38	Condenser (110 mmfd.)	33-1031	69	Dash Speaker (A37)	56-1207
10	Resistor (70,000 ohms)	33-370334	39	Volume Control (350,000 ohms)	33-5149	70	Dash Speaker Only	36-1212
11	Condenser (765 mmfd.)	33-1069	40	Condenser (.01 mfd.)	33-3903-OSU	71	Overhead Speaker (AD)	36-1211
12	R. F. Transformer	32-1985	41	Resistor (500,000 ohms)	33-449344	72	Control	32-5537
13	Second Padder (on tun. cond.)	33-4415	42	Condenser (.01 mfd.)	33-3903-OSG	73	Pilot Lamp Assembly	38-7213
14	Condenser (1.25-.25-.5 mfd.)	32-2063	43	Resistor (1,000,000 ohms)	33-510344	74	Tuning & Volume Knob	28-8495
15	Choke	33-2063	44	"B" Choke	32-1281	75	Tuning Shaft	28-8495
16	Resistor (51,000 ohms)	33-351344	45	Condenser (250 mmfd.)	33-1032	76	Volume Shaft	28-8495
17	Low Frequency Padder	31-6083	46	Choke	32-2063	77	Scale Assembly	32-5539
18	Third Padder (on tun. cond.)	33-399344	47	Local-Distance Switch	42-1160	78	Distributor Resistor	33-1196
19	Oscillator Transformer	32-1986	48	Resistor (99,000 ohms)	33-399344	79	Interference Condenser (.5 mfd.)	33-4007
20	Condenser (250 mmfd.)	33-1032	49	Condenser (.01 mfd.)	33-3903-OSU	80	Antenna Condenser	33-4412
21	Resistor (45,000 ohms)	33-345344	50	Audio Choke	32-7517	81	Antenna Connector	29-6423
22	Padder (Pri. 1st I. F. Trans.)	33-2050	51	Resistor (1,000,000 ohms)	33-510344	82	Fuse	7227
23	First I. F. Transformer	32-1985	52	Condenser (2000 mmfd.)	33-4177	83	Fuse Insulator	27-7729
24	Padder (Sec. 1st I. F. Trans.)	33-399344	53	Tone Control (200,000 ohms)	33-5150	84	"Tee" Bolt (Rec. Mtg.)	28-6161
25	Resistor (99,000 ohms)	33-399344	54	Condenser (.025 mfd.)	33-4381	85	Nut (Rec. Mtg.)	W518A
26	Condenser (.25 mfd.)	33-4146	55	Choke	32-1930	86	Stud (Speaker Mtg.)	6122
27	Condenser (.01 mfd.)	33-4124	56	Condenser (250 mmfd.)	33-1032	87	Nut (Speaker Mtg.)	W51A
28	Resistor (32,000 ohms)	33-332433	57	Output Transformer	32-7551			
29	Condenser (4 mfd.)	33-2151						

SERVICE DATA

Electrical Specifications

Type Circuit: Superheterodyne, with push-pull pentode audio output, battery operated.

Batteries Required:

"A" supply—Philco 172R 2 volt storage battery or a dry A battery Philco Part No. 41-5611. If a dry A supply is used, a ballast lamp (Philco Part No. 1Y1) must be inserted in the socket provided in the dry A battery Part No. 41-5611. This lamp acts as a voltage regulator, and maintains a constant potential of two volts on the filaments of the receiver tubes.

"BC" supply—Philco battery Part No. 41-8007 is used to supply B and C voltages. This battery contains a socket into which the receiver battery cable plug is inserted.

Current Drain: A Battery, 540MA. B Battery, 13MA.

Philco Tubes Used: 1D7G, Detector Oscillator; 1D5G, I.F. Amplifier; 1H6G, 2nd Detector; 1st audio; 1H4G, Phase inverter; and 1E7G, Output.

Frequency Range: 530-1720 K.C.

Intermediate Frequency: 470 K.C.

Speaker: Permanent Magnet Model L2B.

Aligning Compensators

To accurately adjust this receiver precision test equipment is necessary. A signal generator such as the Philco Model 684, covering from 110 to 20,000 Kc is recommended for adjusting the various components at the frequencies specified. A visual indication of the receiver output is also necessary. Philco Model 225 Circuit Tester contains a sensitive output meter and is recommended for this purpose.

Philco fibre handle screw-driver No. 27-7059 and wrench Part No. 3164 complete the equipment necessary for the following adjustments. The locations of the various compensators are shown in Fig. (2).

OUTPUT METER—The 025 Output Meter is connected between one of the plate contacts of the 1E7G tube and ground. Adjust the meter to use the (0-30) volt scale.

INTERMEDIATE FREQUENCY CIRCUIT

Frequency 470 K. C.

1. Connect the 088 Signal Generator output lead through a .1 mfd. condenser to the control grid of the 1C7G tube; and the ground connection of the output lead to the chassis. Then turn the tuning condenser to approximately 580 K.C. and adjust the signal generator for 470 K.C.

2. Now adjust compensators @s, 2nd I. F. Sec., @p 2nd I. F. Pri., @ 1st I. F. Sec., and @p 1st I. F. Pri. for maximum output.

RADIO FREQUENCY CIRCUIT

530 to 1720 K.C.

1. Remove the signal generator output lead from the 1C7G tube and connect it through a 200 mmfd. condenser to the antenna post of the receiver, and the generator ground lead to the chassis.

2. Turn signal generator to 1700 K.C. Rotate receiver tuning condenser to minimum capacity position (clockwise); then place a .006" gauge between the rotor and stator plates (left side of tuning condenser facing front of receiver).

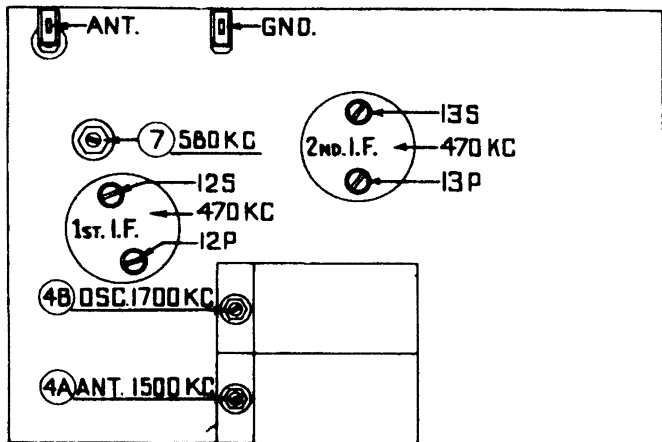


Fig. 2.—Locations of Compensators

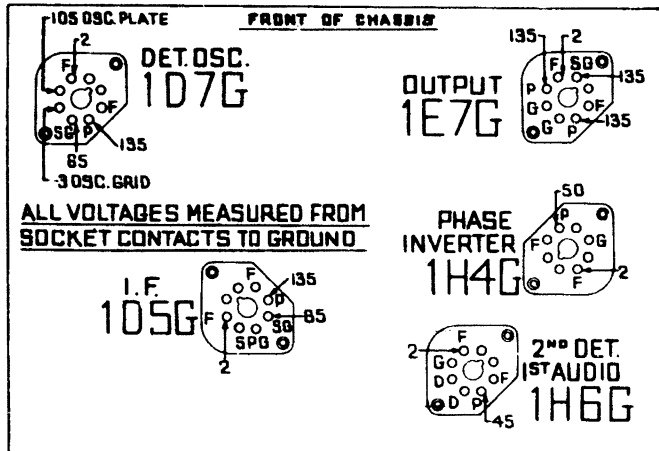


Fig. 1.—View of Sockets from Underside Chassis

The voltages indicated by arrows were measured with a Philco 25 Circuit Tester which contains a voltmeter having a resistance of 1000 ohms per volt. Volume Control at minimum.

and turn condenser until rotor and stator gauge touch gauge. Now remove gauge without disturbing setting of the plates. Compensators ④b Osc. and ④a Ant. are then adjusted for maximum output.

3. Turn signal generator and receiver dials to 580 K.C. and adjust compensator (7) as follows:

First tune compensator ① for maximum output. Then vary the tuning condenser for maximum output. Now retune compensator ① and again vary the tuning condenser back and forth about 580 K.C. for maximum output. This operation of first tuning the compensator, then the tuning condenser is continued until maximum output is obtained at the 580 K.C. frequency.

4. Readjust the 1700 K.C. end of dial as given in paragraph 2 above.
5. Then turn signal generator and receiver dials to 1500 K.C. and adjust compensator @a Ant. for maximum output.

DIAL CALIBRATION—After the above adjustments have been performed, the dial pointer is adjusted to track properly with the tuning condenser. To do this, turn signal generator to 1000 K.C. and tune the receiver tuning condenser for maximum output at this frequency. When maximum output is obtained dial pointer is adjusted to the 1000 K.C. mark on dial.

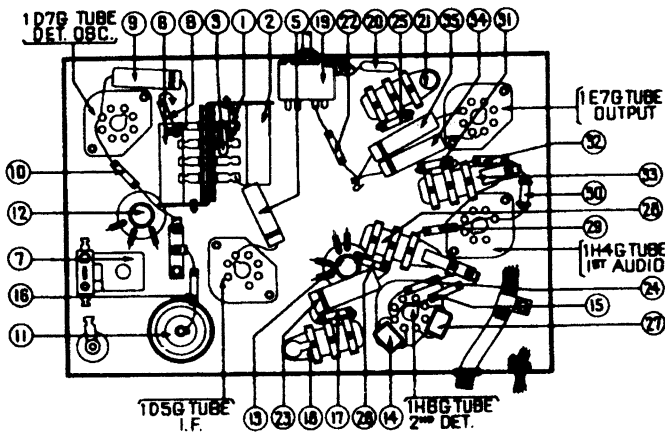


Fig. 3.—Parts Location. Underside of Chassis View

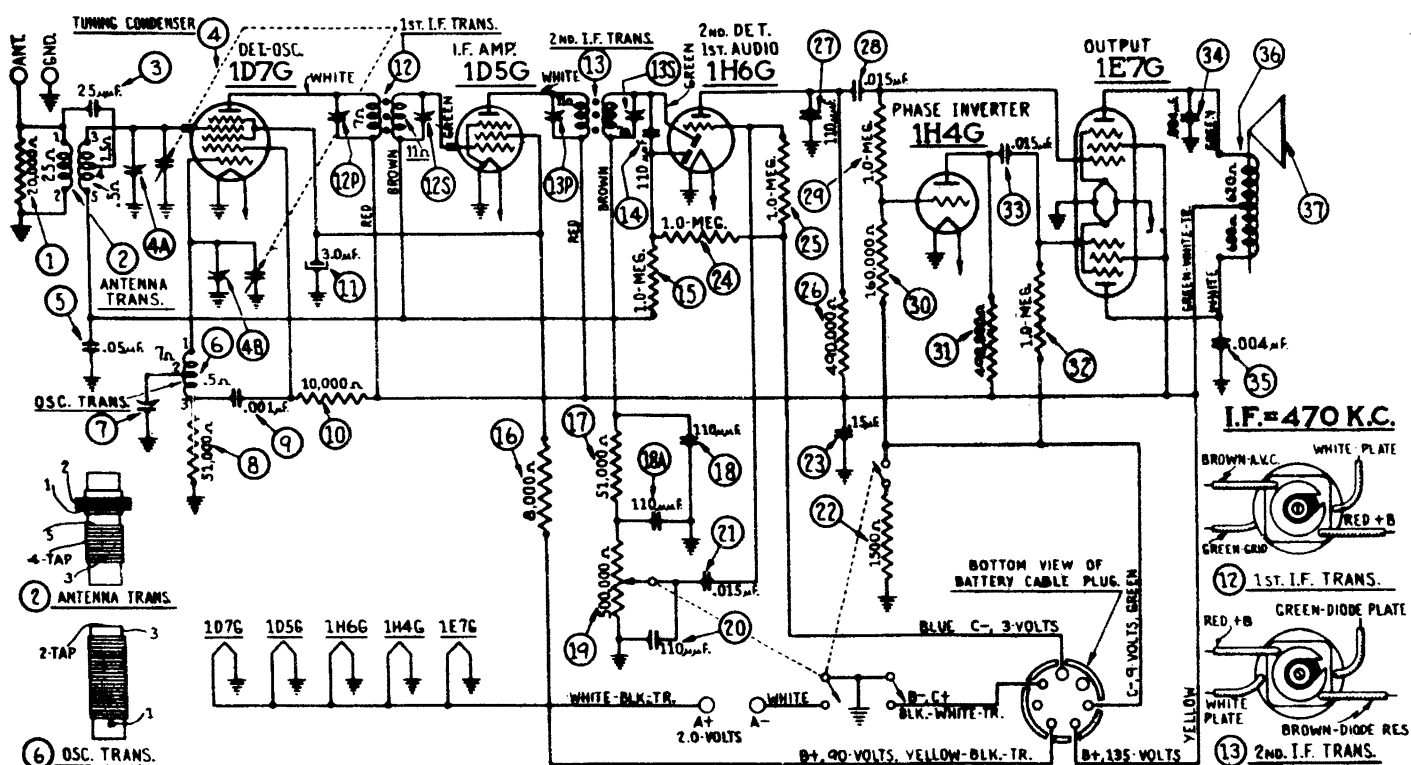


Fig. 4—Schematic Diagram

Replacement Parts—Model 37-33

Schem. No.	Description	Part No.	List Price	Schem. No.	Description	Part No.	List Price	Schem. No.	Description	Part No.	List Price
1	Resistor (20,000 ohm, 1/4 watt)	33-320339	\$0.20	27	Condenser (110 mmfd., mica)	30-1081	\$0.20	27	Socket—7 prong	27-6057	\$0.11
2	Transformer, Antenna	33-3212	1.20	28	Condenser (.015 mfd., bakelite)	3793SU	.35	27	Socket—8 prong	27-6058	.11
3	Condenser (25 mmfd., mica)	30-1067	.20	29	Resistor (1 megohm, 1/4 watt)	33-510839	.20	28	Shield Base	28-3898	.03
4	Tuning Condenser	31-1902	3.00	30	Resistor (100,000 ohm, 1/4 watt)	33-410339	.20	28	Shield	28-2726	.10
5	Condenser, Tubular (.05 mfd.)	30-4444	.30	31	Resistor (400,000 ohm, 1/4 watt)	33-440339	.20	28	Fahnstock Clip	L-1126	1.25 C
6	Oscillator Transformer	33-3213	.35	32	Resistor (1 megohm, 1/4 watt)	33-510839	.20	28	Washer	4243	.01
7	Compensator (500 K.C.)	040008	.25	33	Condenser (.015 mfd., bakelite)	3793SU	.35	27	Washer	27-7414	.70 C
8	Resistor (51,000 ohms)	33-351339	.20	34	Condenser (.004 mfd., tubular)	30-4185	.25	28	Lugs	L-1125	.75 C
9	Condenser (.001 mfd., tubular)	30-4301	.30	35	Condenser (.004 mfd., tubular)	30-4185	.25	41	B Battery	41-8007	
10	Resistor (10,000 ohm, 1/4 watt)	33-310339	.20	36	Speaker L2B, B and F Cabinets	38-1254	6.50	41	A Battery (Wet)	172R	
11	Electrolytic Condenser (3 mfd.)	20-2158	.90	37	Cone Assembly	45-2315		41	A Battery (Dry)	41-8011	
12	1st I. F. Transformer	33-2100	1.50		Dial	27-5243	.15	1Y1	Ballast Lamp		
13	2d I. F. Transformer	33-2103	1.50		Pointer	27-7023	.01		Mounting Screw (Chassis)	W-567	3.00 C
14	Condenser (110 mmfd., mica)	30-1081	.20		Felt Washer	27-7807	.50 C		Mounting Washer (Chassis)	W-315	.50 C
15	Resistor (1 megohm, 1/4 watt)	33-510839	.20		Knob Assembly	27-4282	.10		Mounting Nut (Chassis)	W-124	.35 C
16	Resistor (8,000 ohm, 1/4 watt)	33-290339	.20		Vernier Drive	31-1926			Mounting Bolt (Speaker)	W-1604	.50 C
17	Resistor (51,000 ohm, 1/4 watt)	33-351339	.20		Pilot Lamp	5316	.25		Nut (Speaker)	W-124	.35 C
18	Condenser (110 mmfd., double bakelite)	8035DG	.25		Pilot Lamp Assembly	38-7964	.45				
19	Volume Control & Power Switch	33-5100	1.45		Cable Assembly	41-3206	1.40				
20	Condenser (110 mmfd., mica)	30-1081	.20		Clamp	38-3245	.00 C				
21	Condenser (.015 mfd.)	3793SU	.35		Terminal Panel R.F.	38-7963	.05				
22	Resistor (1,500 ohm, 1/4 watt)	33-215839	.20		Speakers	38-4001	.35 C				
23	Condenser (.15 mfd., tubular)	30-4191	.25		Washers	W-442	.20 C				
24	Resistor (1 megohm, 1/4 watt)	33-510839	.20		Mounting Plate (Coil)	38-3898	.03				
25	Resistor (1 megohm, 1/4 watt)	33-510839	.20		Spacer	27-8228	.01				
26	Resistor (400,000 ohm, 1/4 watt)	33-440339	.20		Screw	W-1655	.20 C				

Figures in black type indicate circled figures in base view.

Prices Subject to Change Without Notice

PHILCO Model 37-34

Electrical Specifications

Type of Circuit: Superheterodyne, with Push-Pull Pentode Audio Output, using a vibrator unit operated by a 6 volt storage battery for supplying "B" power to the receiver.

Power Supply: 6 volt storage battery Philco Type 116-R.

Current Drain: 1.3 Amps.

Philco Tubes Used: 1D7G, Det.-Osc.; 1D5G, I.F. Amp.; 1H6G, 2nd Det. 1st Audio; 1H4G, Phase Inverter; 1E7G Output.

Frequency Range: 530—1720 K.C.

Intermediate Frequency: 470 K.C.

Speaker: Permanent Magnet Model L2B.

Aligning Compensators

To accurately adjust this receiver precision test equipment is necessary. A signal generator such as the Philco Model 088, covering from 110 to 20,000 K.C. is recommended for adjusting the various compensators at the frequencies specified. A visual indication of the receiver output is also necessary, Philco Model 025 Circuit Tester contains a sensitive output meter and is recommended for this purpose.

Philco fibre handle screw-driver No. 27-7059 and wrench Part No. 3164 complete the equipment necessary for the following adjustments. The locations of the various compensators are shown in Figs. 1 and 2.

OUTPUT METER—The 025 Output Meter is connected between one of the plate contacts of the 1E7G tube and ground. Adjust the meter to use the (0-30) volt scale.

DIAL ADJUSTMENT—The tuning condenser is set at the maximum capacity position, by turning the knob clockwise. Loosen the set screw of dial hub and set dial, with Glowing Indicator centered between the first and second index lines at the low frequency end of the scale.

INTERMEDIATE FREQUENCY CIRCUIT

1. Connect the 088 Signal Generator output lead through a .1 mfd. condenser to the grid of the 1D7G tube and the generator ground lead to the chassis. Set the generator for 470 K.C. and turn the receiver dial to approximately 580 K.C.
2. Now adjust compensators 18S, 18P, 17S, and 17P for maximum output.

RADIO FREQUENCY CIRCUIT

1. Remove the signal generator output lead from the 1D7G tube and connect it through a 200 mmfd condenser to the receiver aerial post.
2. Set the 088 Signal Generator indicator and the receiver dial to 1600 K.C.
3. Now adjust compensators 5A and 5 for maximum output.

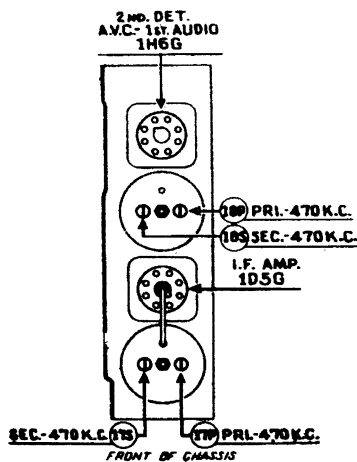


Fig. 2—I. F. Compensators

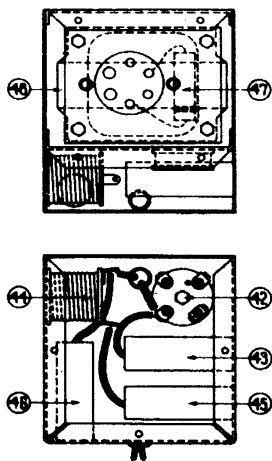


Fig. 3—Power Unit

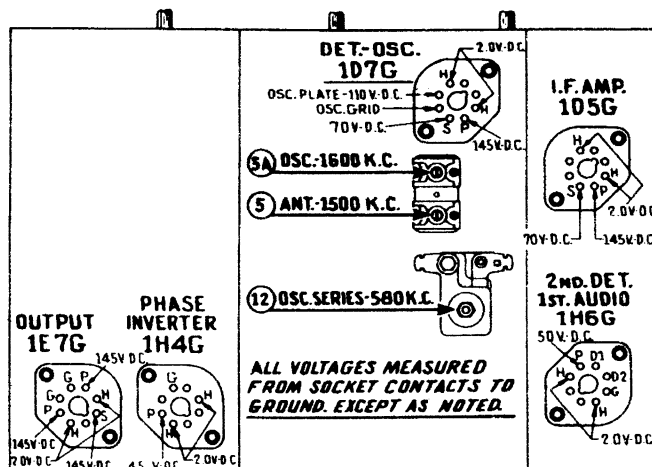


Fig. 1—Socket Voltages and R. F. Compensators

The voltages indicated by arrows were measured with a Philco 025 Circuit Tester which contains a voltmeter having a resistance of 1000 ohms per volt. Volume Control at minimum, Storage Battery fully charged.

4. The low frequency end of the tuning scale is now adjusted as follows: Set the signal generator at and turn the receiver dial to 580 K.C. Now adjust compensator 12 for maximum output, then vary the tuning condenser of the receiver for maximum output about the 580 K.C. dial mark. Now turn compensator 12 slightly to the right or left and again vary the receiver tuning condenser for maximum output. If the output reading increases, turn compensator 12 in the same direction a trifle more, and vary the tuning condenser again for maximum output. If a decrease in output is noted turn the compensator 12 in the opposite direction. This procedure of first setting the compensator and then varying the tuning condenser is continued until there is no further gain in the output reading.

5. Set the signal generator and receiver dials as given in Paragraph 2 above and adjust compensator 5A for maximum output.

6. Rotate the signal generator and receiver dials to 1500 K.C. and adjust compensator 5 for maximum output.

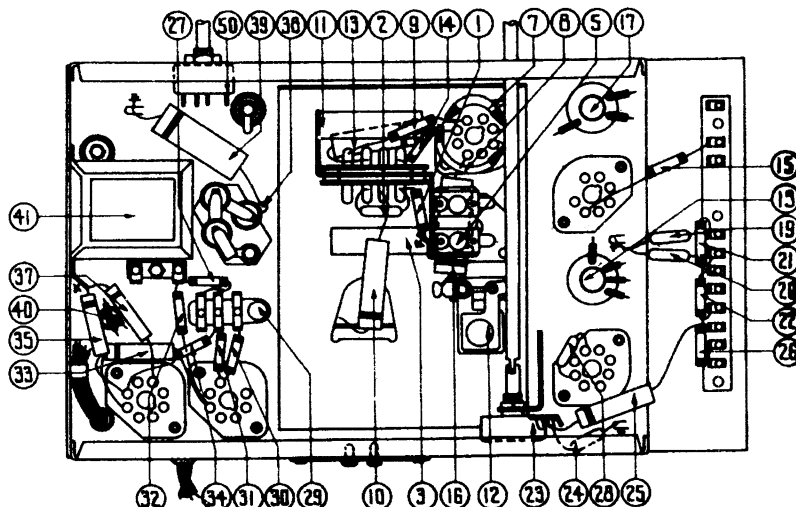


Fig. 4—Parts Locations—underside of chassis

PHILCO Model 37-38

Electrical Specifications

Type Circuit: Superheterodyne, with class "B" audio output, battery operated.

Batteries Required:

"A" supply—Philco 172R 2 volt storage battery or a dry A battery Philco Part No. 41-8011. If a dry A supply is used, a ballast lamp Philco type 1F1 must be inserted in the socket provided in the dry A battery (Part 41-8011). This small lamp acts as a voltage regulator, and maintains a constant potential of two volts on the filaments of the receiver tubes.

"BC" supply—Philco battery Part No. 41-8007 is used to supply B and C voltages. This battery contains a socket into which the receiver battery cable plug is inserted.

Current Drain: A Battery, 720 M. A.; B Battery, 20 M. A.

Philco Tubes Used: 1C7G, Detector Oscillator; 1D5G, I.F. Amplifier; 1H4G, 2nd Detector, A.V.C.; 1E5G, 1st Audio; 1H4G, Driver; 1J6G, Output.

Frequency Range: Range 1, 530-1720 K. C.; Range 2, 2.3-7.4 M. C.

Intermediate Frequency: 470 K. C.

Speaker: KR-17—B, F Cabinets; HR-12—J Cabinet.

Alignment of Compensators

To accurately adjust this receiver, precision test equipment is necessary. A signal generator such as the PHILCO MODEL 088 Signal Generator, covering from 110 to 20,000 K. C. is recommended for use in adjusting the compensators at the various frequencies specified. A visual indication of the receiver output is also necessary to obtain correct adjustment of the compensators. PHILCO MODEL 025 Circuit Tester contains a sensitive output meter and is recommended for these adjustments.

Philco Fibre Wrench No. 3164 and Fibre Handle Screw-Driver No. 27-7059 complete the necessary equipment for these adjustments. The locations of the various compensators are shown in Figs. 2 and 3.

The following procedure must be observed in adjusting the compensators:—

DIAL ADJUSTMENT—The tuning condenser is set at the maximum capacity position, by turning the tuning knob clockwise. Loosen the set screw of dial hub and set dial, with Glowing Indicator centered between the first and second index lines at the low frequency end of scale.

OUTPUT METER—The 025 Output Meter is connected between one of the plate prongs of the 1J6G tube and the chassis. Then adjust the meter to use the (0-30) volt scale.

INTERMEDIATE FREQUENCY CIRCUIT

Frequency 470 K. C.

1. Connect the 088 Signal Generator output lead through a .1 mfd. condenser, to the control grid of the 1C7G tube, and the generator ground lead to the chassis.
2. Set the range switch in position No. 1 (Broadcast), then rotate the tuning condenser of the receiver to the maximum capacity position (clockwise) and adjust the signal generator for 470 K. C. Now adjust compensators (28a) 2nd I.F. Sec., (28p) 2nd I.F. Pri., (15a) 1st I.F. Sec. and (15p) 1st I.F. Pri. for maximum output.

RADIO FREQUENCY CIRCUIT

Tuning Range 2.3 M. C. to 7.4 M. C.

1. Remove the signal generator output lead from the grid of the 1C7G tube and connect it through a 200 mmf Condenser to the antenna terminal on input panel (rear of chassis), and the generator ground lead to the ground terminal of this panel.
2. Set the range switch in position No. 2. Turn the receiver and signal generator dials to 7.0 M. C. Now adjust compensator (12) for maximum output.

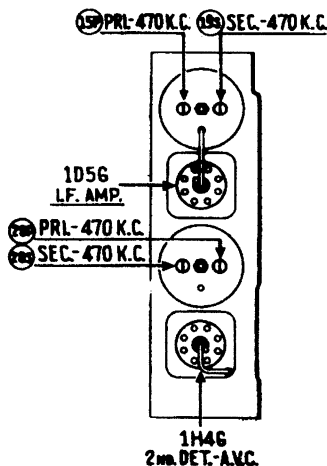


Fig. 2—I.F. Compensators
Top of Chassis

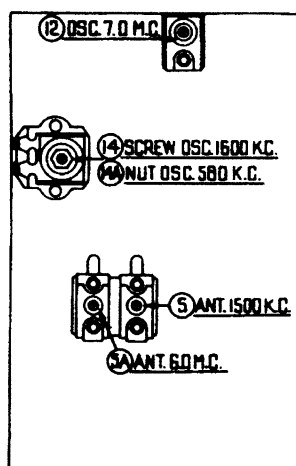


Fig. 3—R.F. Compensators
Underside of Chassis

SOCKET VOLTAGES

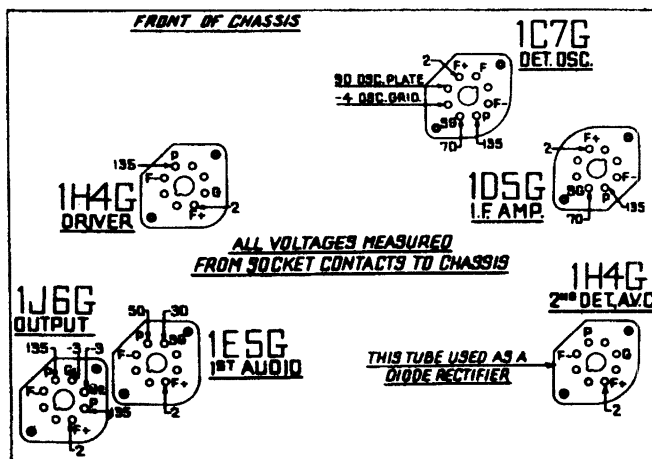


Fig. 1—Socket Voltages—Underside of Chassis View

The voltages indicated by arrows were measured with a Philco 025 Circuit Tester which contains a voltmeter having a resistance of 1000 ohms per volt. Volume Control at minimum, range switch in broadcast position.

3. Turn signal generator and receiver dials to 6.0 M. C. and adjust compensator (9a) for maximum output.

Tuning Range 530 to 1720 K. C.

1. Set range switch in position No. 1 (Broadcast). Turn signal generator and receiver dials to 1600 K. C. Then adjust (14) Osc. "Screw", and (5) antenna for maximum output.
2. Turn signal generator and receiver dials to 580 K. C. and adjust compensator (14a) Osc. "nut"—see Fig. 3—as follows: To adjust compensator (14a) the tuning condenser must be rolled for maximum output, thusly: First turn the compensator (14a) for maximum output. Then vary the tuning condenser for maximum output about 580 K. C. Now retune compensator (14a) and again vary the tuning condenser back and forth about the 580 K. C. dial mark for maximum output.

This operation of first tuning the compensator, then the tuning condenser is continued until maximum output is obtained at the 580 K. C. dial mark. If the signal generator is not accurately calibrated the maximum point on the dial of the receiver may fall slightly above or below the 580 K. C. dial mark.

3. Turn signal generator and receiver dials to 1600 K. C. and readjust compensator (14) Osc. "screw" for maximum output.

4. Turn signal generator and receiver dials to 1500 K. C. and readjust compensator (5) for maximum output.

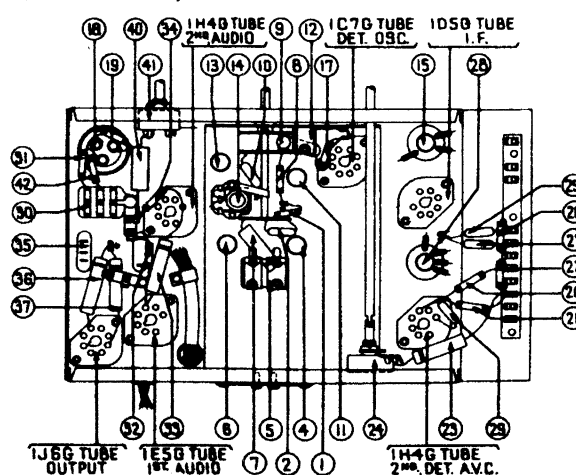


Fig. 4—View of Parts from Underside of Chassis

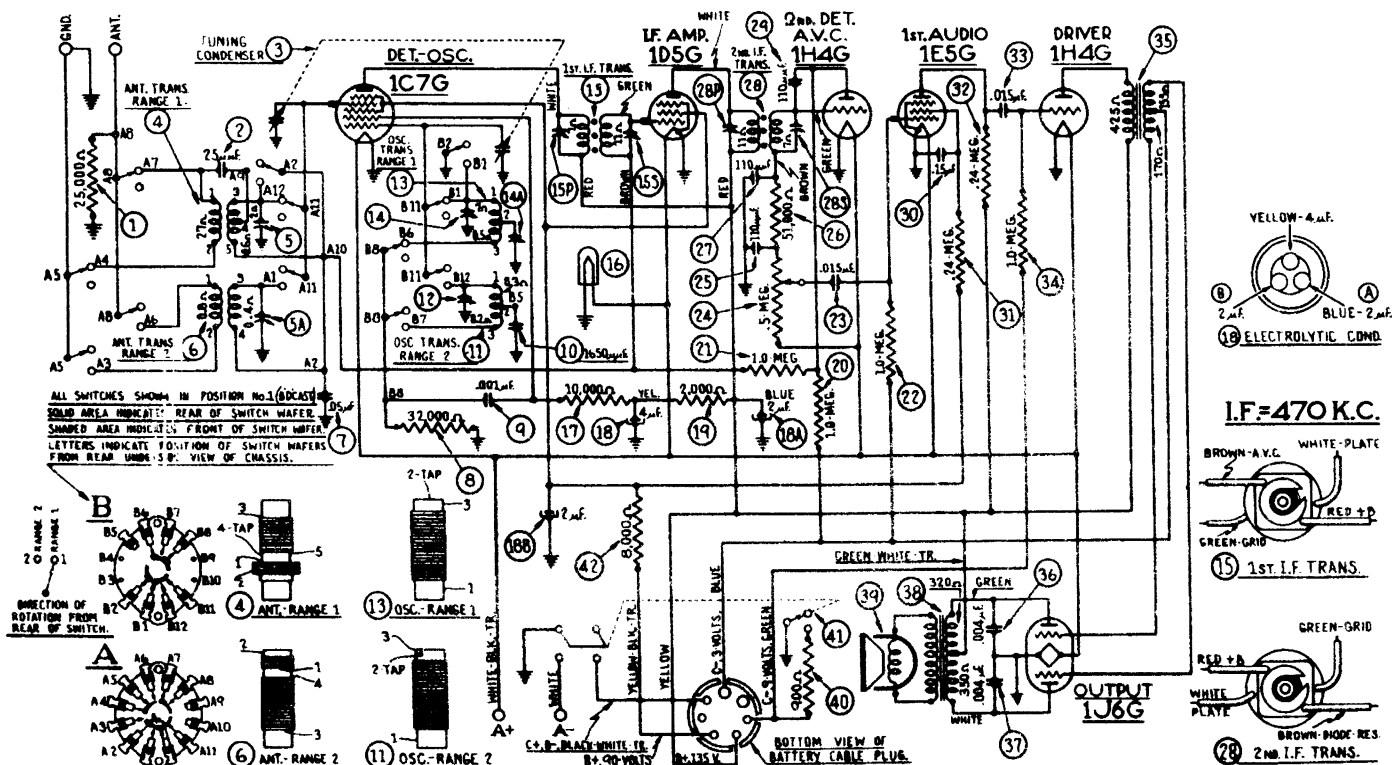


Fig. 5—Schematic Diagram—Model 37-38

Replacement Parts—Model 37-38

Schem. No.	Description	Part No.	List Price	Schem. No.	Description	Part No.	List Price	Schem. No.	Description	Part No.	List Price
1	Resistor (25,000 ohm, 1/4 watt)	33-328339	\$0.20	28	Resistor (51,000 ohm, 1/4 watt)	33-351339	\$0.20		Pilot Lamp	34-2180	
2	Condenser (25 mmfd. mica)	30-1067	.20	27	Condenser (110 mmfd., mica)	30-1081	.20		Vernier Drive	31-1863	.35
3	Tuning Condenser	21-1826	3.00	28	2d I.F. Transformer	32-2102	1.50		Socket—8 prong	27-6066	\$0.11
4	Antenna Transformer (Broadcast)	32-2189	1.30	29	Condenser (110 mmfd., mica)	30-1081	.20		Socket—7 prong	27-6067	.11
5	Compensator (Twin)	31-6120	.50	30	Condenser (.15 mfd. bakelite)	628780	.35		Tube Shield	28-2776	.10
6	Antenna Transformer (Police)	32-2246	.80	31	Resistor (240,000 ohm, 1/4 watt)	33-494339	.20		Tube Shield Base	28-3996	.03
7	Condenser (.05 mfd. tubular)	30-4444	.20	32	Resistor (240,000 ohm, 1/4 watt)	33-424339	.20		Volume Control Shaft	38-8068	
8	Resistor (32,000 ohm, 1/4 watt)	33-328339	.20	33	Condenser (.015 mfd. tubular)	30-4226	.20		Shaft Spring	28-4117	.40 C
9	Condenser (.001 mfd. tubular)	30-4463	.20	34	Resistor (1 megohm, 1/4 watt)	33-510339	.20		Shaft Retaining Clip	28-4394	.01
10	Condenser (1680 mmfd. semi-fixed)	31-6066	.40	35	Audio Transformer (Interstage)	32-7637	2.00		Mounting Grommet R.F. Unit	27-4317	.04
11	Oscillator Transformer (Police)	32-2121	.40	36	Condenser (.004 mfd. tubular)	30-4456	.20		Mounting Sleeve	28-2257	.01
12	Compensator (Single)	31-6101	.20	37	Condenser (.004 mfd. tubular)	30-4456	.20		Washer	W-425	.85 C
13	Oscillator Transformer (Broadcast)	32-2120	.65	38	Output Transformer—KR17, HR12	32-7689	1.60		Screw	W-729	.45 C
14	Compensator (Twin)	31-6100	.40	39	Cone Voice Coil—KR17	36-3540	.80		Washer	28-3927	.01
15	1st I.F. Transformer	32-2100	1.50	40	Cone Voice Coil—HR12	36-3567	1.30		Terminal Panel (I.F. Unit)	38-7703	.25
16	Pilot Lamp	34-2180	.26	41	Resistor (900 ohm, 1/4 watt)	33-1223	.20		Spacer	28-4001	.25 C
17	Resistor (10,000 ohm, 1/4 watt)	33-310339	.20	42	Power Switch	33-5170	1.20		Cable Assembly (Battery)	41-3196	1.40
18	Electrolytic Condenser (4-2.2 mfd.)	30-2162	1.40		Resistor (8,000 ohms, 1/4 watt)	33-280339	.20		A Battery, Wet	172R	
19	Resistor (2,000 ohm, 1/4 watt)	33-220339	.20		Range Switch	42-1195			A Battery, Dry	41-8011	
20	Resistor (1 megohm, 1/4 watt)	33-510339	.20		Screen Bracket Assembly	31-1878	.25		B Battery	41-8007	
21	Resistor (1 megohm, 1/4 watt)	33-510339	.20		Dial	27-5196	.45		Cable (Speaker)	41-3207	.30
22	Resistor (1 megohm, 1/4 watt)	33-510339	.20		Hub	28-7182	.10		Knob, Tuning	27-4321	.10
23	Condenser (.015 mfd. tubular)	30-4358	.20		Clamp	28-2837	.10		Knob, Tone and Volume	27-4332	.10
24	Volume Control	33-5165	1.00		Set Screw	W-1506	2.00 C		Speaker, KR-17, B and F Cabinets	36-1248	10.00
25	Condenser (110 mmfd. mica)	30-1031	.20		Pilot Lamp Assembly	38-7875			Speaker, HR-12, J Cabinet	36-1250	11.00

Figures in black type indicate circled figures in Base View.

Prices Subject to Change without Notice.

PHILCO Model 37-60

Model 37-60

General Description

Model 37-60 is a 5 tube superheterodyne receiver for operation on alternating current and has two tuning ranges, covering Standard Broadcast and American short-wave reception up to 7 megacycles. The new Philco High Efficiency self-centering glass tubes are used.

The circuit incorporates the Philco Aerial Tuning System—controlled by the range switch—which provides maximum sensitivity and noise reduction when used with the Philco All Wave Aerial.

The red and black leads of the All Wave Aerial "transmission line", are connected to terminals 1 and 2 respectively, of the terminal panel provided at the rear of the chassis. Connect the jumper of the terminal panel across terminals 3 and 4.

If a temporary aerial is used, the jumper should be across terminal 2 and 3. The aerial connects to terminal 1 and the ground to terminals 3. A good ground connection is required in all installations.

CONSTRUCTION

The chassis is constructed in three basic assembly units.

The Radio Frequency unit contains a 6A8G tube which functions as a Detector-Oscillator, tuning condenser, antenna and oscillator coils for each tuning range, selector switch—compensating condensers for all coils and other parts necessary for the associated circuits. The unit is separately mounted on rubber grommets, cushioning it from the main chassis.

The Intermediate Frequency unit, mounted on the right-hand side of the chassis (facing the front) consists of the Intermediate

Frequency coils compensating condensers, a 6K7G tube for I. F. Amplifier stage, and a 6Q7G tube as the second detector-automatic volume control and first audio stage.

All voltages supplied to the I. F. and R. F. units are furnished from a terminal strip mounted in this unit.

The Power Pack and audio output circuits, together with the required Voltage dividers and filter condensers are mounted in the power unit. All high Voltage A. C. Wiring is housed in the power transformer assembly which includes the rectifier socket.

Although unit construction has changed the appearance of this model, the service bulletin will be of great assistance in checking through all stages of the receiver. The Wiring Diagram, as usual, is numbered, indicating all important parts. These numbers correspond with the parts layout shown in Fig. 6. In addition, the range switch wafers are shown on the schematic diagram. The contacts on each wafer are lettered and numbered to indicate their connection points in the schematic diagram, which are also lettered and numbered. The physical drawings of each coil used in the receiver are also shown on schematic diagram Fig. 5. The connections of these coils are numbered on the coil itself and on the schematic diagram.

Fig. 1 shows the Voltage measurements taken from the bottom of the socket at each contact. In Fig. 2, the correct position of the dial indicator, for proper adjustment of the compensators is shown. Figs. 3 and 4, are the location of the I. F. and R. F. compensators respectively.

This Receiver is supplied in two models, type B and type F. These instructions, however, are used for both types.

Electrical Specifications

Voltage Rating: 115 Volts. A. C.

Frequency Rating: 50-60 Cycle.

For 25-40 cycle operation use Power Transformer, marked with asterisks in Parts List.

Power Consumption: 60 Watts.

Type and Number of Philco Tubes: 1 type 6A8G First Detector-oscillator; 1 type 6K7G I. F. Amplifier; 1 type 6Q7G

2nd Detector, A. V. C., and 1st Audio; 1 type 6F6G Pentode Output and 1 type 5Y4G, Rectifier.

Speaker: S7.

Type of Circuit: Superheterodyne with Pentode Power Output.

Intermediate Frequency: 470 K. C.

Undistorted Power Output: 3 Watts.

Tuning Ranges: Two—(1): 530 to 1720 K.C., (2): 2.3 to 7.4 M.C.

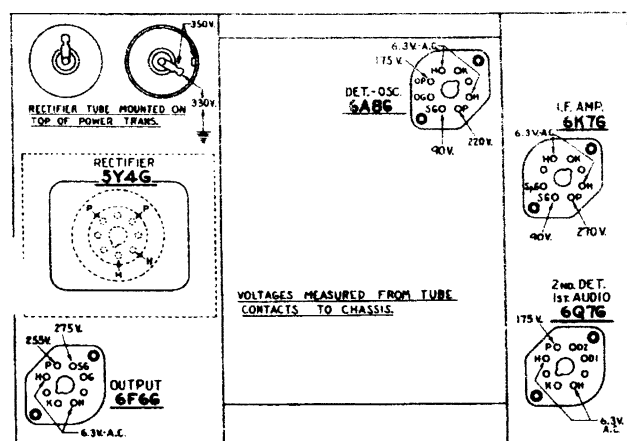


Fig. 1—Socket Voltages Viewed from Underside of Chassis

Measurements taken with Philco Model 025 Circuit Tester which contains a 1000 ohm per volt voltmeter. Line voltage, 115—Wave Switch in Broadcast Position. Dial turned to 600 K.C.

POWER TRANSFORMER DATA

Lead No. Shown on Schematic	A. C. Volts	Current	Circuit	Color	Resistance
1-2	120	—	Primary	White	50 ohms
5-7	670	70 M. A.	High Voltage Sec.	Yellow	145 ohms 155 ohms
3-4	5.0	2.0 A	Fil. Rect.	Blue	.1 ohms
8-9	6.7	2.1 A	Fil.	Black	.1 ohms
6	—	—	Center Tap of 5-7	Yellow Green Tr	—

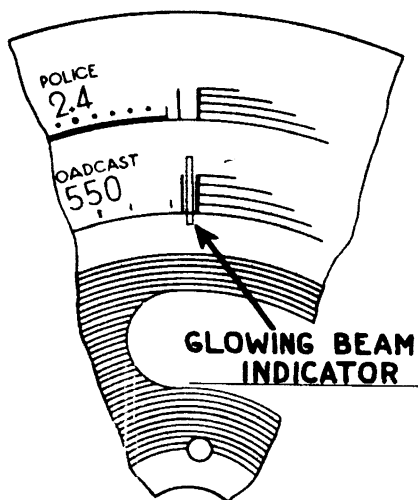


Fig. 2—Dial Calibration

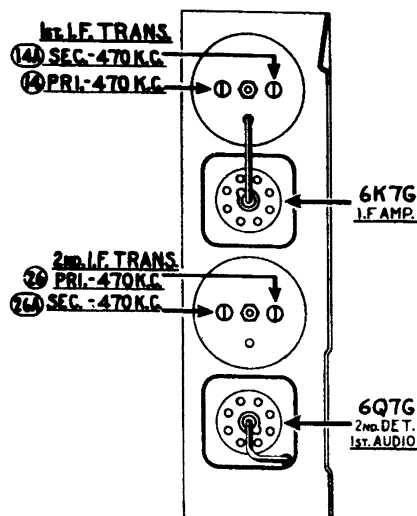


Fig. 3—Locations of I. F. Compensators Top of Chassis

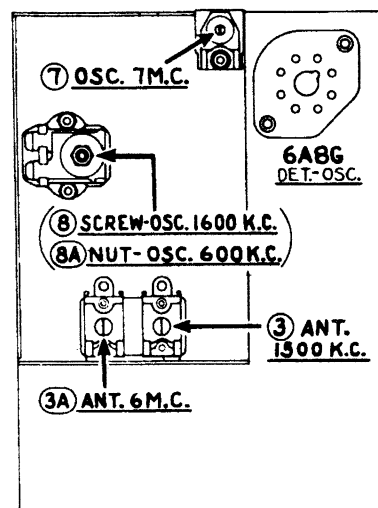


Fig. 4—Locations of R. F. Compensators Underside of Chassis

Adjustment of Compensators

The accurate adjustment of the various compensating condensers is vital to the proper functioning of this receiver. There are four compensating condensers in the I. F. Circuit, three in the Oscillator Circuit, and two in the Antenna Circuit. Incorrect adjustment will cause loss of sensitivity, unsatisfactory tone, and poor selectivity.

To accurately adjust this receiver, precision test equipment is necessary. A signal generator such as the PHILCO MODEL 088 SIGNAL GENERATOR, covering from 110 to 20,000 K. C. is recommended to adjust the compensators at the various frequencies specified. A visual indication of the receiver output is also necessary to obtain correct adjustment of the compensators. PHILCO MODEL 025 CIRCUIT TESTER contains a very sensitive output meter and is recommended for these adjustments.

Philco Fibre Wrench No. 3164 and Fibre Handle Screw-driver No. 27-7059 complete the necessary equipment for these adjustments. The locations of the various compensators are shown in Figs. 3 and 4.

The following procedure must be observed in adjusting the compensators:

DIAL ADJUSTMENT—The Tuning condenser is set at the maximum capacity position, by turning the tuning knob counter-clockwise. Loosen the set screw of dial hub and set dial, (see Fig. 2) with Glowing Indicator centered between the index lines at the low frequency end of scale.

OUTPUT METER—The Output Meter is attached to the Plate and Cathode terminals of the (6F6G tube) and adjusted to use the (0-30) volt scale. When adjusting each circuit, care should be taken to have the signal generator attenuator set to give approximately $\frac{1}{4}$ scale reading on output meter.

INTERMEDIATE FREQUENCY CIRCUIT

- 1 Turn wave band switch to Range 1. Rotate the tuning control to approximately 600 K. C. Connect the 088 Signal Generator output lead through a .1 mfd. condenser to the grid of the 6A8G tube, and the ground lead of Signal Generator to the chassis.
- 2 Set Signal Generator indicator for 470 K. C., adjust attenuator for approximately $\frac{1}{4}$ scale reading on output meter. Then adjust compensators 24a 2nd I. F. Sec., 24 2nd I. F. Pri., 14a 1st I. F. Sec., 14 1st I. F. Pri., for maximum reading on output meter.

RADIO FREQUENCY CIRCUIT—Range 2: 2.3 to 7.4 M. C.

- 1 Turn Range switch to Range 2. Remove signal generator output lead from the grid of 6A8G tube.
- 2 Attach signal generator output lead through a 0.1 mfd. condenser to the ANT. TERMINAL No. 1, on aerial panel, and the generator ground to chassis. Connect TERMINAL No. 2, to GROUND TERMINAL No. 3, with connector link provided on the panel.
- 3 Set Signal Generator and receiver dials for 7.0 M. C. Now adjust compensator 7 for maximum reading on output meter. Then turn Signal Generator and Receiver to 6.0 M. C., and adjust compensator 3a for maximum output.

RANGE 1: 530 to 1720 K. C.

- 1 Turn range switch to Range 1. Turn the Receiver dial to 1600 K. C. Then adjust compensators 8 and 3 for maximum reading on output meter.

The 088 Signal Generator dial is set at 800 K. C. and the second harmonic of this frequency (1600 K. C.) is used in making the above adjustment.

- 2 The low frequency end of the band is now tuned by turning Signal Generator and Receiver dials to 600 K. C. and adjusting compensator 8a—see note (a) below—for maximum output.
 - (a) When compensator 8a osc. series is being adjusted, the Tuning Condenser must be rolled for maximum output. This is accomplished as follows: First tune compensator 8a for maximum output. Then vary the Tuning Condenser for maximum output at 600 K. C. Now retune Compensator 8a, and again vary the tuning condenser back and forth about 600 K. C., for maximum output. This operation of first tuning the Compensator, then the Tuning Condenser is continued until maximum output is obtained at the 600 K. C. frequency.
- 3 Set the Signal Generator and Receiver dials for 1600 K. C. and re-adjust Compensator 8 for maximum output. Then turn the dials to 1500 K. C. and re-adjust compensator 3 for maximum reading on output meter.

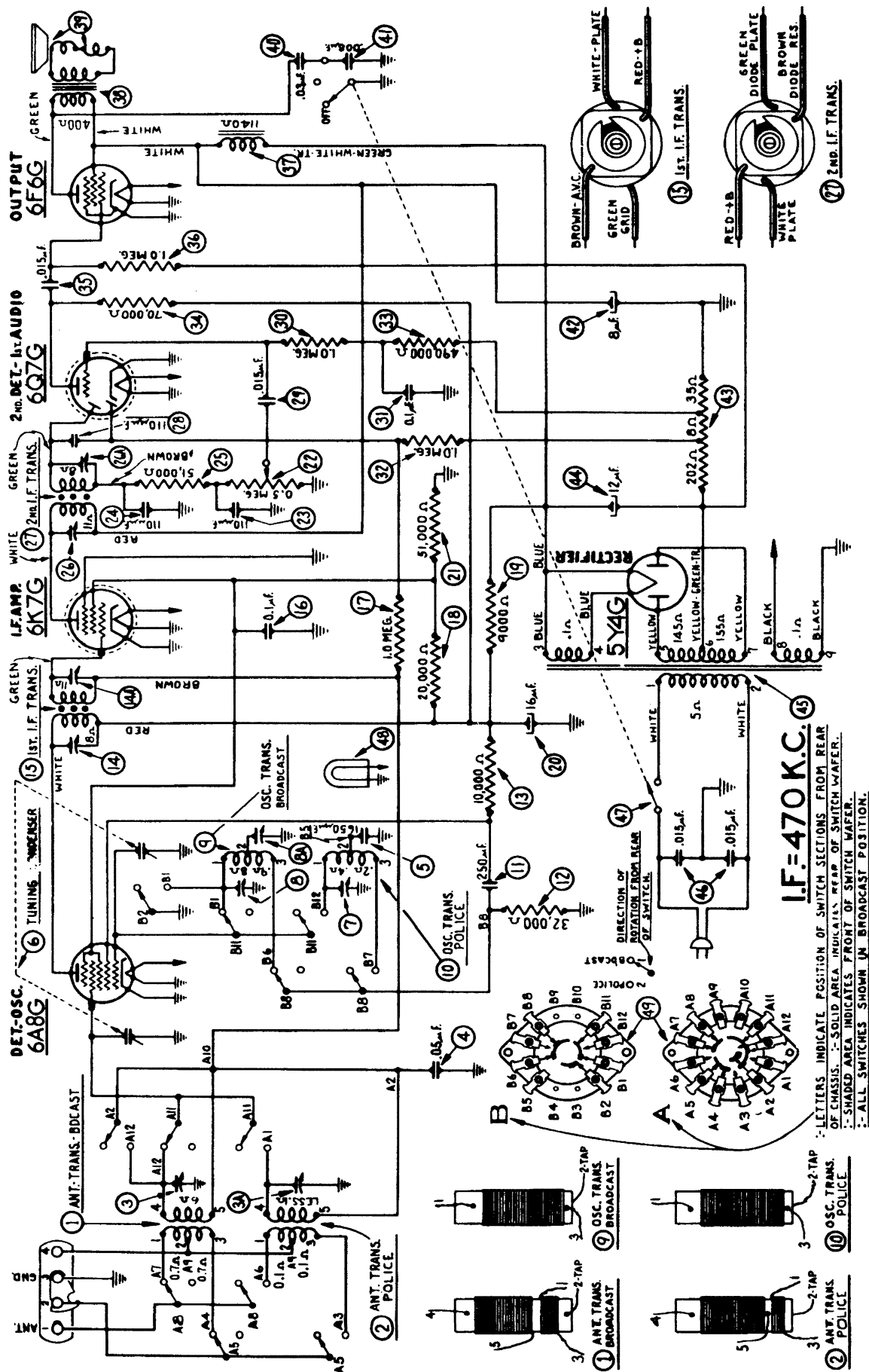


Fig. 5—Schematic Diagram—Model 37-60

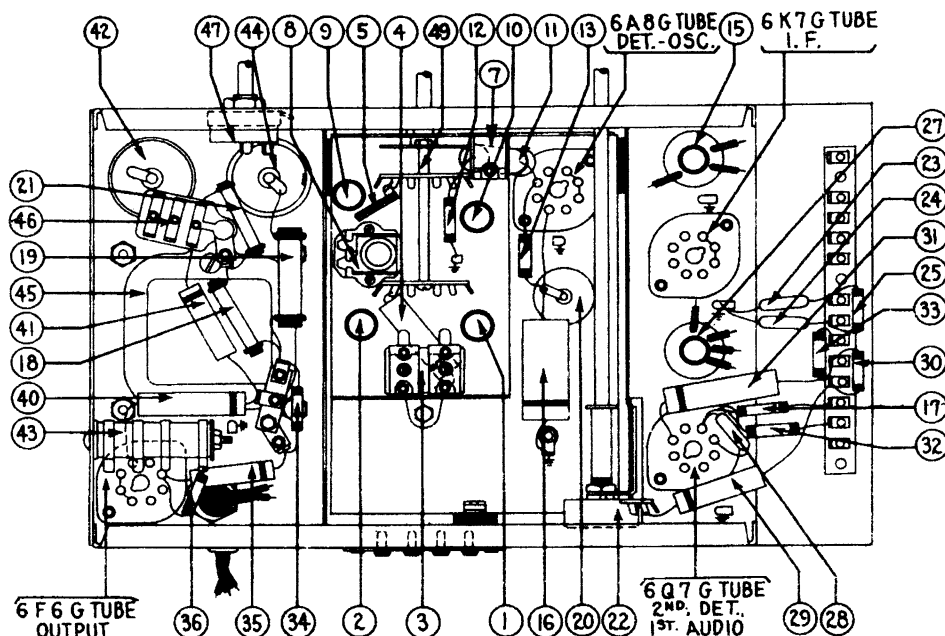


Fig. 6—Base View of Chassis

Replacement Parts—Model 37-60

Schem. No.	Description	Part No.	Price List	Schem. No.	Description	Part No.	Price List
①	Antenna Transformer (Broadcast)	32-2108	\$0.80	②7	Tone Control & Power Switch	42-1180	\$0.75
②	Antenna Transformer (Police)	32-2119	.65	②8	Pilot Lamp	34-2039	.16
③	Compensator ANT 1600 K.C.	31-6093	.40	②9	Wave Switch	42-1195	1.50
④A	ANT. Compensator 6 meg.	Part of ③			Dial	27-5196	.30
⑤	Condenser (.05 mfd. Tubular)	30-4444	.20		Dial Hub	28-7182 FA-3	.10
⑥	Condenser (1650 mfd. Semi-fixed)	31-6096	.40		Dial Hub Clamp	28-2837 FA-3	.10
⑦	Tuning Condenser	31-1826	3.00		Set Screw	N-1506	Per C 2.00
⑧	Oscillator Compensator (Police 7 M.C.)	31-6101	.20		Screen Bracket & Screen Assembly	31-1878	.25
⑨	Oscillator Compensator (Broadcast) 1600 K.C. Screw	31-6100	.40		Pilot Lamp Socket Assembly	38-7706	.35
⑩A	Compensator (600 K.C. Nut)	Part of ⑨			Tube Socket 7 Prong	27-6057	.11
⑪	Oscillator Transformer (Broadcast)	32-2120	.65		Tube Socket 8 Prong	27-6058	.11
⑫	Oscillator Transformer (Police)	32-2121	.40		Tube Shield	28-2726	.10
⑬	Condenser (.250 mfd. Mica)	30-1032	.25		Tube Shield Base	28-3898	.03
⑭	Resistor (32000 ohms ½ watt)	33-332339	.20		I. F. Coil Shield	33-7763	.20
⑮	Resistor (10000 ohms ½ watt)	33-310339	.20		R.F. Trans. Mtg. Plate	28-3908	.02
⑯	Compensator (Pri. 1st I.F.)	Part of ⑮			R.F. Trans. Mtg. Spacer	27-8228	.01
⑰A	Compensator (Sec. 1st I.F.)	Part of ⑮			R.F. Trans. Mtg. Screw	W-1635	Per C .30
⑱	1st I.F. Transformer	32-2100	1.50		R.F. Mtg. Grommet	27-4317	.04
⑲	Condenser (.1 mfd. Tubular)	30-4170	.25		R.F. Mtg. Sleeve	28-2257 FA-3	.01
⑳	Resistor (1 meg. ½ watt)	33-510344	.20		R.F. Mtg. Bushing	27-8339	Per C .40
㉑	Resistor (20000 ohms 1 watt)	33-320439	.20		Screw	W-729	
㉒	Resistor (9000 ohms 2 watts)	33-290539	.30		Vernier Drive Assem.	31-1879	
㉓	Electrolytic Condenser (16 mfd.)	30-2118	1.65		3.C. Resistor Mtg. Screw	W-512	Per C .90
㉔	Resistor (51000 ohms 1 watt)	33-351439	.20		B.C. Resistor Mtg. Nut	W-317A	Per C .40
㉕	Volume Control	33-5157	1.00		Volume Control Shaft	28-6498	
㉖	Condenser (mica 110 mmfd.)	30-1031	.20		Volume Control Shaft Spring	28-4117	Per C .40
㉗	Condenser (mica 110 mmfd.)	30-1031	.20		Washer Volume Control Shaft	28-4186	
㉘	Resistor (51000 ohms ½ watt)	33-351339	.20		Washer Volume Control Shaft	4436	Per C 1.50
㉙	Compensator 2nd I.F. Pri.	Part of ㉙			Volume Control Shaft Retaining Clip	28-8610	.03
㉚A	Compensator 2nd I.F. Sec.	Part of ㉙			Volume Control Mtg. Nut	W-484 FA-3	Per C 1.25
㉛	2nd I.F. Transformer Unit	32-2102	1.50		Tone Control Mtg. Nut	27-8330	Per C 1.25
㉜	Condenser (mica 110 mmfd.)	30-1031	.20		Insulator	38-7708	Per C .40
㉝	Condenser (Tubular .015 mfd.)	30-4358	.20		I.F. Terminal Panel	38-7708	.25
㉞	Resistor (1 meg. ½ watt)	33-510339	.20		I.F. Terminal Spacer	4122	.01
㉟	Condenser (Tubular .1 mfd.)	30-4122	.20		Knob Tuning	27-4321	.10
㊱	Resistor (1 megohm ½ watt)	33-510339	.20		Knob Volume, Tone	27-4332	.10
㊲	Resistor (490000 ohm ½ watt)	33-449339	.20		Knob Selector Switch	27-4332	.10
㊳	Resistor (70000 ohm ½ watt)	33-370339	.20		Chassis Mtg. Screw		
㊴	Condenser (Tubular .015 mfd.)	30-4226	.20		Tuning Condenser Grommet	27-4325	.02
㊵	Resistor (1 meg. ½ watt)	33-510339	.20		Screw	W-650 FA-3	Per C .40
㊶	Field Coil Assembly	36-3039	2.75		Baffle Assembly B Cabinet	40-5935	
㊷	Output Transformer	32-7019			A.C. Cord	L-2183	.40
㊸	Cone & Voice Coil Assembly	36-3157	.80		Speaker Cable	L-2181	.25
㊹	Condenser (Tubular .03 mfd.)	30-4380	.20		Clamp Electrolytic Condenser	6440	.06
㊺	Condenser (Tubular .008 mfd.)	30-4112	.20		Insulator Electrolytic Condenser	27-7194	.01
㊻	Electrolytic Condenser (8 mfd.)	30-2024	1.10		Grid Cap	38-3888	.01
㊼	Bias Resistor	33-3277	.20		Spacer (Compensating Condenser)	29-6032	.04
㊽	Electrolytic Condenser (12 mfd.)	30-2117	1.20		Screw	W-1653 FA-3	Per C .30
㊾	Power Transformer (50-50 cycle, 115 volts)	32-7583	4.25		Speaker S-7	36-1009	5.75
㊿	Power Transformer (25-40 cycle, 115 volts)	32-7584			Nut Mtg. Speaker	W-124 A	Per C 1.35
①	Condenser (Bakelite Twin .015 mfd.)	3793 DG	.40		Baffle Assem. F Cabinet	40-5933	

*25 cycle Transformer 32-7584 used in Model 37-60A.
†Speaker used in F & B Cabinet.

PHILCO Parts and Service Division

May, 1936

Printed in U. S. A.

PHILCO Model 37-61

Model 37-61

General Description

Model 37-61 is a 5 tube superheterodyne receiver for operation on alternating current and has two tuning ranges, covering standard broadcast and short wave reception. It, also, uses the new Philco High Efficiency self-centering glass tubes.

The circuit includes the Philco Foreign Tuning System—controlled by the range switch—providing maximum sensitivity and noise reduction when used with the New Philco High-Efficiency Aerial, supplied with the receiver.

The red and black leads of the High-Efficiency Aerial "transmission line" are connected to terminals 1 and 2 respectively, of the terminal panel provided at the rear of the chassis. Connect the jumper of the terminal panel across terminal 3 and 4. A good ground connection is required in all installations. Make the ground connection to terminal 3 on the terminal panel.

If a temporary aerial is used, the jumper should be across terminal 2 and 3. The aerial connects to terminal 1 and the ground to terminal 3.

CONSTRUCTION

The chassis is constructed in three basic assembly units.

The Radio Frequency unit contains a 6A8G tube which functions as a Detector-Oscillator, tuning condenser, antenna and oscillator coils for each tuning range, selector switch—compensating condensers for all coils and other parts necessary for the associated circuits. The unit is separately mounted on rubber grommets, cushioning it from the main chassis.

The Intermediate Frequency unit, mounted on the right-hand side of the chassis facing the front, consists of the Intermediate

Frequency coils, compensating condensers, a 6K7G tube for I. F. Amplifier stage, and a 6Q7G tube as the second detector-automatic volume control and first audio stage. All voltages supplied to the I. F. and R. F. units are furnished from a terminal strip mounted in this unit.

The Power Pack and audio output circuits, together with the required Voltage dividers and filter condensers are mounted in the power unit. All high Voltage A. C. Wiring is housed in the power transformer assembly which includes the rectifier socket.

Although unit construction has changed the appearance of this model, the service bulletin will be of great assistance in checking through all stages of the receiver. The Wiring Diagram, as usual, is numbered, indicating all important parts. These numbers correspond with the parts layout shown in Fig. 6. In addition, the range switch wafers are shown on the schematic diagram. The contacts on each wafer are lettered and numbered to indicate their connection points in the schematic diagram, which are also lettered and numbered. The physical drawings of each coil used in the receiver are also shown on schematic diagram Fig. 5. The connections of these coils are numbered on the coil itself and on the schematic diagram.

Fig. 1 shows the Voltage measurements taken from the bottom of the socket at each contact. In Fig. 2, the correct position of the dial indicator, for proper adjustment of the compensators is shown. Figs. 3 and 4 show the location of the I. F. and R. F. compensators respectively.

This receiver will be supplied in two model cabinets type B, and F. These instructions, however, will cover both type cabinets.

Electrical Description

Voltage Rating: 115 Volts. A. C.

Frequency Rating: 50-60 Cycle.

For 25 to 40 cycle operation use Power Transformer, marked with asterisks in Parts List.

Power Consumption: 60 Watts.

Type and Number of Philco Tubes: 1 type 6A8G First Detector-oscillator; 1 type 6K7G I. F. Amplifier; 1 type 6Q7G

2nd Detector, A. V. C., and 1st Audio; 1 type 6F6G Pentode Output and 1 type 5Y4G, Rectifier.

Speaker: S7.

Type of Circuit: Superheterodyne with Pentode Power Output.

Intermediate Frequency: 470 K. C.

Undistorted Power Output: 3 Watts.

Tuning Ranges: Two—(1): 530 to 1720 K. C.; (2): 5.7 to 18.2 M. C.

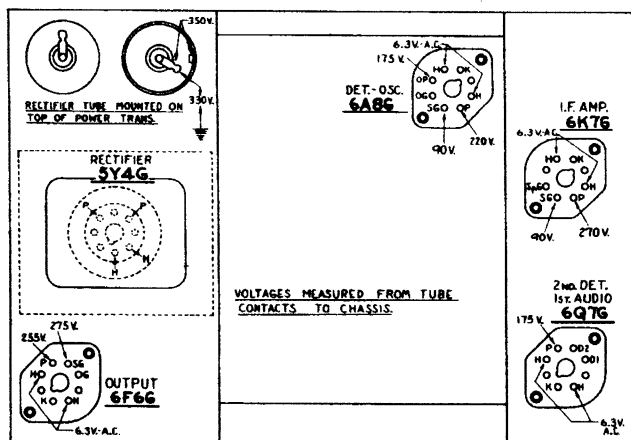


Fig. 1—Socket Voltages Viewed from Underside of Chassis

Measurements taken with PHILCO MODEL 025 Circuit Tester which contains a 1000 ohms per volt Voltmeter. Line voltage, 115—Range Switch in Broadcast Position. Dial tuned to 600 K. C.

POWER TRANSFORMER DATA

Lead No. Shown on Schematic	A. C. Volts	Current	Circuit	Color	Resistance
1-2	120	—	Pri.	White	5 ohms
3-4	5.0	2.0A	Fil. Rect.	Blue	.1 ohm
5-7	670	70 M. A.	High Voltage Sec.	Yellow	145 ohm 155 ohm
6	—	—	Center Tap of 5-7	Yellow Green Tr.	—
8-9	6.7	2.1A	Fil.	Black	.1 ohm

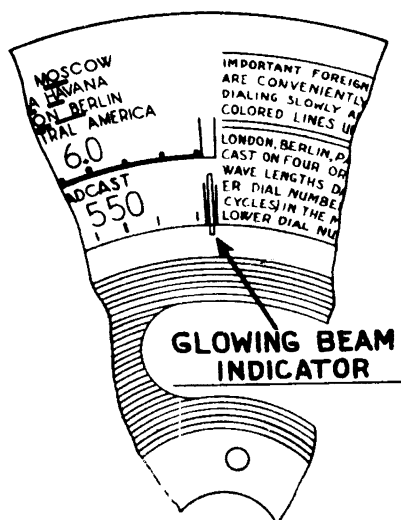


Fig. 2--Dial Calibration

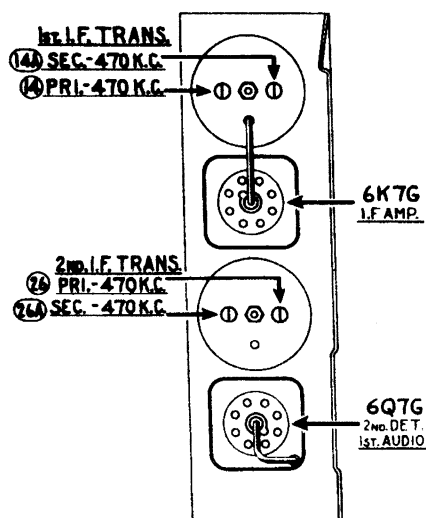


Fig. 3--Locations of I. F. Compensators Top of Chassis

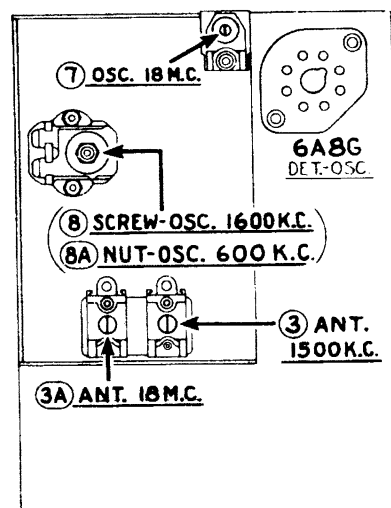


Fig. 4--Locations of R. F. Compensators Underside of Chassis

Adjustment of Compensators

The accurate adjustment of the various compensating condensers is vital to the proper functioning of this receiver. There are four compensating condensers in the I. F. Circuit; three in the Oscillator Circuit; and two in the Antenna Circuit. Incorrect adjustment will cause loss of sensitivity, unsatisfactory tone, and poor selectivity.

To accurately adjust this receiver, precision test equipment is necessary. A signal generator such as the PHILCO MODEL 088 SIGNAL GENERATOR, covering from 110 to 20000 K. C. is recommended to adjust the compensators at the various frequencies specified. A visual indication of the receiver output is also necessary to obtain correct adjustment of the compensators. PHILCO MODEL 025 CIRCUIT TESTER contains a very sensitive output meter and is recommended for these adjustments.

Philco Fibre Wrench No. 3164 and Fibre Handle Screw-driver No. 27-7059 complete the necessary equipment for these adjustments. The locations of the various compensators are shown in Figs. 3 and 4.

The following procedure must be observed in adjusting the compensators:—

DIAL ADJUSTMENT—The Tuning Condenser is set at the maximum capacity position, by turning the tuning knob counter-clockwise. Loosen the set screw of dial hub and set dial, (see Fig. 2) with Glowing Indicator centered between the index lines at the low frequency end of scale.

OUTPUT METER—The Output Meter is connected to the Plate and Cathode terminals of the (6F6G) tube and adjusted to use the (0-30) Volt scale. When adjusting each circuit, care should be taken to have the Signal Generator attenuator set to give approximately $\frac{1}{4}$ scale reading on output meter.

INTERMEDIATE FREQUENCY CIRCUIT

- 1 Turn range switch to Range 1. Rotate the tuning control to approximately 600 K. C. Connect the 088 Signal Generator output lead through a .1 mfd. condenser to the grid of the 6A8G tube.
- 2 Set Signal Generator indicator for 470 K. C. adjust attenuator for approximately $\frac{1}{4}$ scale reading on output meter. Then adjust compensators (24) 2nd I. F. Sec., (20) 2nd I. F. Pri., (14) 1st I. F. Sec., (14) 1st I. F. Pri., for maximum reading on output meter.

RADIO FREQUENCY CIRCUIT

Range 2.—5.7 to 18 M. C.

- 1 Remove the signal generator output lead and series condenser from the 6A8G tube and connect them to the ANT. TERMINAL No. 1, on aerial input panel (rear of chassis) and the

generator ground lead to GND. TERMINAL No. 3, rear of chassis. Connect TERMINAL No. 2 to GROUND TERMINAL No. 3 with connector link provided on the panel.

- 2 Set range switch in position No. 2 (S. W.). Turn signal generator and receiver dials to 18 M. C. and adjust compensator (7) Osc. for maximum output.
- 3 The adjustment of the antenna compensator on the high frequency range causes a slight detuning of the oscillator circuit. In order to overcome this detuning effect, connect a variable condenser of approximately 350 mfd., having a good vernier drive, across the oscillator section of the tuning condenser. Leaving the signal generator and receiver dials at 18 M. C., tune the added condenser so that the second harmonic of the receiver oscillator will beat against the signal from the signal generator. The antenna compensator (3a) should then be adjusted to give maximum output.
- 4 Now remove the external condenser from the tuning condenser of receiver and turn compensator (7) osc. to the maximum capacity position (clockwise), then without moving signal generator or receiver tuning condenser, turn compensator (7) (counter-clockwise) until a second peak is reached on the output meter. The first peak is caused by tuning to the image frequency signal and must be neglected. Compensator (7) is adjusted on the second peak to give maximum output.

RANGE 1: 530 to 1720 K. C.

Turn range switch to Range No. 1. Turn the Receiver dial to 1600 K. C. Then adjust compensators (8) and (3) for maximum reading on output meter.

The 088 Signal Generator dial is set at 800 K. C. and the second harmonic of this frequency (1600 K. C.) is used in making the above adjustment.

- 2 The low frequency end of the band is now tuned by turning Signal Generator and Receiver dials to 600 K. C. and adjusting compensator (8a)—see note (a) below—for maximum output.
 - (a) When compensator (8a) osc. series is being adjusted, the Tuning Condenser must be rolled for maximum output. This is accomplished as follows: First tune compensator (8a) for maximum output. Then vary the Tuning Condenser for maximum output at 600 K. C. Now retune Compensator (8a) and again vary the tuning condenser back and forth at 600 K. C., for maximum output. This operation of first tuning the Compensator, then the Tuning Condenser is continued until maximum output is obtained at the 600 K. C. frequency.
- 3 Set the Signal Generator and Receiver Dials for 1600 K. C. and re-adjust Compensator (8) for maximum output. Then turn the dials to 1500 K. C. and re-adjust compensator (3) for maximum reading on output meter.



Fig. 5—Schematic Diagram—Model 37-61

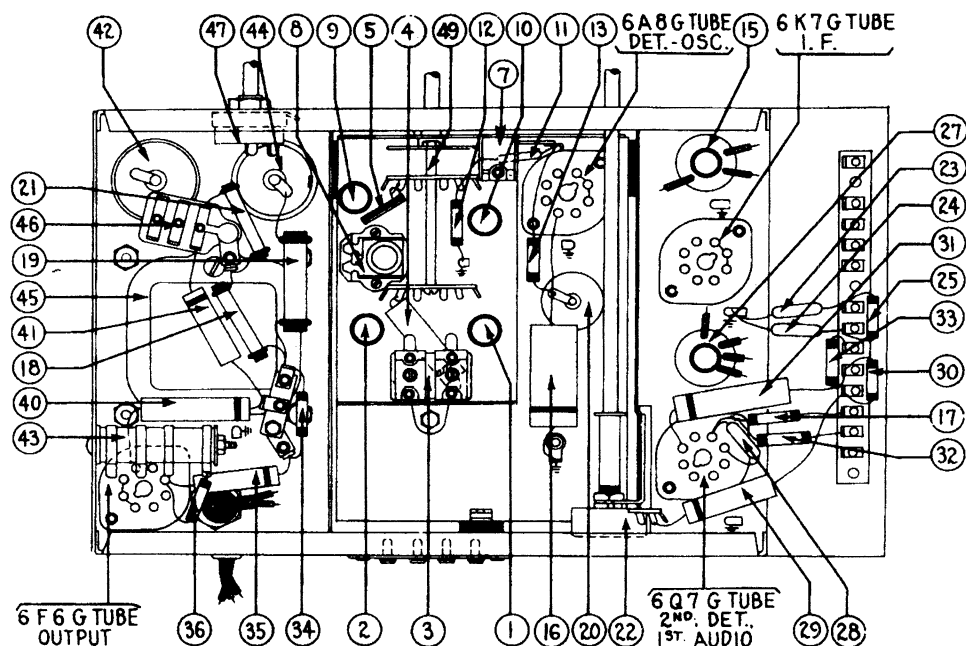


Fig. 6—Base View of Chassis

Replacement Parts—Model 37-61

Schem. No.	Description	Part No.	Price List	Schem. No.	Description	Part No.	Price List
①	Antenna Trans. Broadcast	32-2108	\$0.80	⑨	Wave Switch Assembly	42-1195	\$1.50
②	Antenna Trans. S.W.	32-2142	.50		Dial	27-5205	
③	Compensator Twin Ant. 1500 K.C.	31-6063	.40		Dial Hub	28-7152 FA-3	.10
④A	Compensator Ant. 18 M.C.	Part of ①			Dial Hub Clamp	28-2837 FA-3	.10
⑤	Condenser (Tubular .05 mfd.)	30-4444	.20		Set Screw	N-1506	Per C 2.00
⑥	Condenser Semi-fixed 3500 mfd.	31-6103	.60		Screen Bracket & Screen Assembly	31-1878	.25
⑦	Tuning Condenser	31-1851	3.25		Pilot Lamp Socket Assembly	28-7706	.35
⑧	Compensator Osc., 18 M.C.	31-6101	.20		Tube Socket (7-prong)	27-6057	.11
⑨	Compensator Osc., 1600 K.C. "Screw"	31-6100	.40		Tube Socket (8-prong)	27-6058	.11
⑩A	Compensator Osc., 600 K.C. "Nut"	Part of ⑧			Tube Shield	28-2726	.10
⑪	Transformer O. Broadcast	32-2120	.65		Tube Shield Base	28-3898	.03
⑫	Transformer Osc. S.W.	32-2143	.60		I.F. Coil Shield	38-7763	.20
⑬	Condenser (Tubular 250 mfd.)	30-1032	.25		R.F. Transformer Mtg. Plate	28-3808	.02
⑭	Resistor (32000 ohms ½ watt)	33-332339	.20		R.F. Transformer Mtg. Spacer	27-8228	.01
⑮	Resistor (10000 ohms ½ watt)	33-310339	.20		R.F. Transformer Mtg. Screw	W-1635	Per C .30
⑯	Compensator (1st I.F. Pri. 470 K.C.)	Part of ⑨			R.F. Unit Mtg. Grommet	27-4317	.04
⑰A	Compensator (1st I.F. Sec. 470 K.C.)	Part of ⑨			R.F. Unit Mtg. Sleeve	28-2257 FA-3	.01
⑱	1st I.F. Transformer	32-2100	1.50		R.F. Unit Mtg. Washer	W-425A	
⑲	Condenser (Tubular 0.1 mfd.)	30-4170	.25		Screw	W-729 FA-3	Per C .25
⑳	Resistor (1 megohm ½ watt)	33-510339	.20		Tuning Condenser Mtg. Grommet	27-4325	.02
㉑	Resistor (20000 ohm, 1 watt)	33-320439	.20		Tuning Condenser Mtg. Screw	W-650 FA-3	Per C .40
㉒	Resistor (9000 ohms, 2 watt)	33-290539	.30		B.C. Resistor Mtg. Screw	W-512	Per C .90
㉓	Electrolytic condenser, 16 mfd.	30-2118	1.65		B.C. Resistor Mtg. Nut	W-317A	Per C .40
㉔	Resistor (51000 ohms 1 watt)	33-351439	.20		Volume Control Shaft	28-6498	.10
㉕	Volume Control	33-5157	1.00		Volume Control Shaft Washer	28-4188	
㉖	Condenser (110 mmfd. Mica)	30-1031	.20		Volume Control Shaft Spring	4436	Per C 1.50
㉗	Condenser (110 mmfd. Mica)	30-1031	.20		Volume Control Shaft Retaining Clip	28-4117	Per C .40
㉘	Resistor (51000 ohms ½ watt)	33-351339	.20		Volume Control Mtg. Nut	28-8610	.08
㉙	Compensator (2nd I.F. Pri. 470 K.C.)	Part of ⑨			Volume Control Mtg. Nut	W-684 FA-3	Per C 1.25
㉙A	Compensator (2nd I.F. Sec. 470 K.C.)	Part of ⑨			Tone Control Mtg. Nut	W-684 FA-3	Per C 1.25
㉚	2nd I.F. Transformer	32-2102	1.50		Tone Control Insulator	27-8320	Per C .40
㉛	Condenser (110 mmfd. Mica)	30-1031	.20		I.F. Terminal Panel	38-7703	.25
㉜	Condenser (.015 mfd. Tubular)	30-4358	.20		Vernier Tuning Assembly	31-1879	
㉝	Resistor (1 megohm ½ watt)	33-510339	.20		Vernier Tuning Screws	W-1599 FA-3	
㉞	Condenser (0.1 mfd. Tubular)	30-4122	.20		I.F. Terminal Spacer	28-4001	Per C .25
㉟	Resistor (1.0 megohm ½ watt)	33-510339	.20		Knob Tuning	27-4330	.10
㊱	Resistor (490,000 ohm ½ watt)	33-449339	.20		Knob Tuning Vernier	27-4331	.10
㊲	Resistor (70000 ohm ½ watt)	33-370839	.20		Knob Volume, Tone Controls	27-4332	.10
㊳	Condenser (.015 mfd. Tubular)	30-4226	.20		Knob Wave-Switch	27-4332	.10
㊴	Resistor (1 megohm ½ watt)	33-510339	.20		Chassis Mtg. Screw		
㊵	Field Coil Assembly	36-3039	2.75		Baffle Assembly B cabinet	40-5935	
㊶	Output Transformer	32-7019	.85		Baffle Assembly F Cabinet	40-5933	
㊷	Cone and Voice Coil Assembly	36-3157	.80		A.C. Cord	L-2183	.40
㊸	Condenser (.03 mfd. Tubular)	30-4380	.20		Speaker Cable	L-2181	.25
㊹	Condenser (.008 mfd. Tubular)	30-4112	.20		Clamp Electrolytic Condenser	6440	.08
㊺	Electrolytic Condenser (8 mfd.)	30-2024	1.10		Insulator Electrolytic Condenser	27-7194	.01
㊻	Bias Resistor (245 ohm)	33-3277	.20		Grid Cap	38-3888	.01
㊼	Electrolytic Condenser 12 mfd.	30-2117	1.20		Spacer Compensating Condenser	29-6032	.04
㊽	Power Transformer (50-60 cycle 105-120 volt)	32-7583	4.25		Screw	W-1633 FA-3	Per C .30
㊾	*Power Transformer (25 cycle 115 volt)	32-7584			Speaker S7	36-1009	5.75
㊿	Condenser Bakelite Twin (.015-.015 mfd.)	3793 DG	.40		Nut Speaker Mtg.	W-124	Per C .35
1	Tone Control & AC Switch	42-1180	.75		Screw Speaker Mtg.	W-1604	Per C .50
2	Pilot Lamp	34-2039	.15		Bottom Shield Plate (F Cabinet)	28-3895 FA-3	

*Power Transformer used in Model 37-61A

Prices Subject to Change Without Notice

PHILCO
Parts and Service Division

Model 37-84, Code-122

General Specifications

TYPE CIRCUIT: Superheterodyne with Pentode output.
POWER SUPPLY: 115 V., 60 cycle A.C.
TUBES USED: 1 type 6J7G, Det. Osc., 1 type 6J7G 2nd detector—first audio, 1 type 6F6G output, 1 type 5Y4G Rectifier.
FREQUENCY RANGE: 540-1700 K.C.
INTERMEDIATE FREQUENCY: 470 K.C.
POWER CONSUMPTION: 45 watts.
SPEAKER: SB.
POWER OUTPUT: 1/2 watt.

Adjusting Compensating Condensers

To accurately adjust the compensating condensers in the Model 37-84 receiver, it is necessary to use a signal generator of high stability on all frequencies, such as the PHILCO MODEL 088 Signal Generator. This instrument has a continuous frequency range from 110 to 20,000 K.C., and is designed to meet every requirement of the serviceman.

An output meter is also needed,—PHILCO Model 025 Circuit Tester includes a very sensitive output meter.

Convenient tools to use in adjusting the compensators are the PHILCO No. 3164 Fibre Wrench and No. 27-7059 Fibre Handled Screw-driver.

The locations of the various compensating condensers are shown in Fig. 1. Connect the output meter to the plate and cathode contacts of the 6F6G power tube, and adjust it to use the 0-30 volt range.

When adjusting each circuit, care should be taken to have the signal generator attenuator set to approximately 1/4 scale reading on output meter.

Intermediate Frequency Circuit

1. Turn gang condenser to maximum capacity (counter-clockwise) and set the volume control of the receiver in the maximum position (clockwise).
2. Connect the 088 signal generator output lead through a .1 mfd. condenser, to the grid of the 6J7G Detector-oscillator tube and the generator ground to the chassis.
3. Turn the sensitivity control ⑪ to maximum capacity position (clockwise), and then release 1 1/2 turns (counter-clockwise).
4. Set signal generator at 470 K.C. and adjust compensators ⑩ and ⑫ clockwise until a hiss (oscillation) is heard. Now turn sensitivity control ⑪ counter-clockwise until the hiss ceases, then continue for 1/4 turn more.

TUBE SOCKET VOLTAGES (Measured from Tube Contact to Chassis)

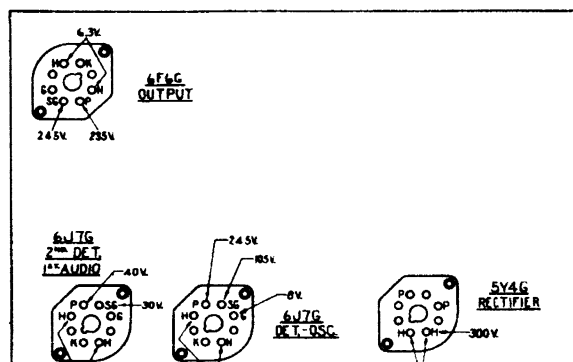


Fig. 2. Tubes as viewed from underside of Chassis

The voltages at the points indicated by the arrows above were obtained with a Philco type 025 Circuit Tester which contains a high resistance (1000 ohms per volt) voltmeter.

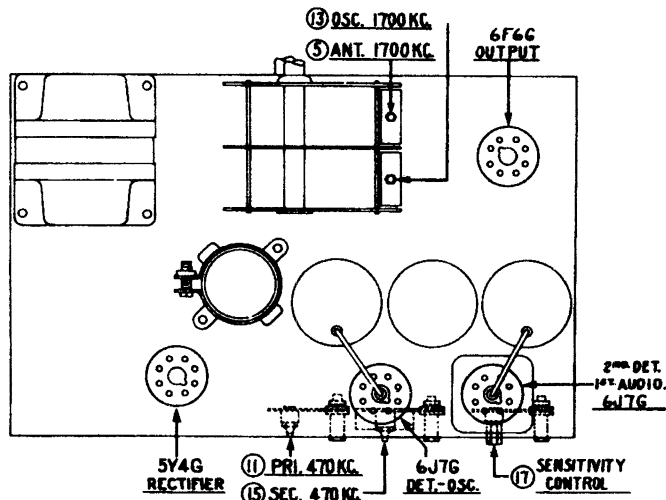


Fig. 1. Locations of Compensating Condensers

Radio Frequency Circuit

1. Turn the gang condenser to the minimum capacity position (extreme clockwise) and place a .006" (six-thousandths inch) gauge between the stator and rotor plates. Now turn the gang counter-clockwise until stator and rotor plates touch gauge.
2. Remove gauge from gang condenser. Now place signal generator output lead through a 100 mmfd. condenser to the aerial post of the receiver. Set signal generator at 850 K.C., (using second harmonic, 1700 K.C.). Adjust compensators ⑬ osc., and ⑤ ant., for maximum reading on output meter.
3. Turn signal generator to 1400 K.C. and adjust gang condenser for maximum output. Then adjust compensator ⑮ for maximum reading on output meter.
4. After the above adjustments are completed, the dial pointer is checked for calibration by turning signal generator to 1000 K.C. Then tune receiver for maximum signal. The dial pointer should then indicate 1000 K.C.

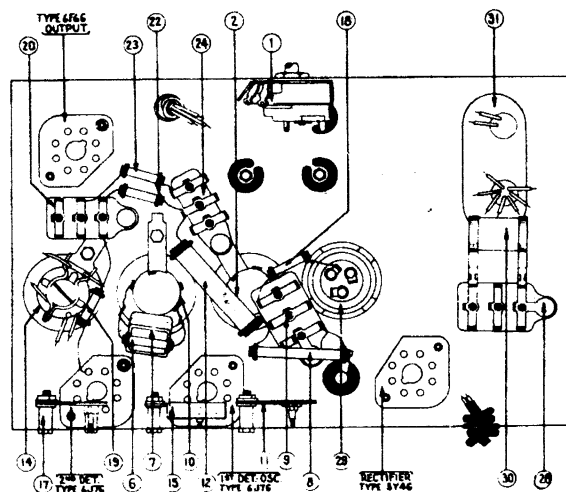


Fig. 3. Base view of Chassis

Replacement Parts for Model 37-84

No. On Figs.	Description	Part No.	List Price	No. On Figs.	Description	Part No.	List Price
①	Volume Control and On-off Switch.....	33-3055	1.45	Ⓔ	Condenser (Electrolytic 4-8. mfd.).....	30-2013	1.95
②	Antenna Transformer	32-1310	.40	Ⓕ	Resistor (Wire Wound 325 ohms).....	7465	.15
④	Condenser—Capacity obtained by twisting end of two leads together.....			Ⓖ	Power Transformer (50-60 cycle 115).....	32-7180	3.60
⑤	Tuning Condenser Assembly.....	31-1122	4.00		Power Transformer (25 cycle 115).....	7422	..
③	Compensator (Antenna).....	Part of ④	..	Ⓗ	Pilot Lamp	6608	.09
⑥	Resistor (6000 ohms, ½ watt).....	33-260339	.20		Eight Prong Socket Rectifier.....	27-6053	.11
⑦	Condenser (.0014 mfd. Mica).....	7007	.30		Seven Prong Socket.....	27-6057	.11
⑧	Resistor (13,000 ohms, ½ watt).....	33-313439	.20		Tube Shield	28-2726	.10
⑨	Condenser (Double .09-.09 mfd. Bakelite).....	4989-DG	.40		Tube Shield Cap.....	28-2727	.02
⑩	Oscillator Transformer	32-1311	.40		Knob	27-4282	.10
⑪	Compensator (I. F. Primary).....	04000A	.15		Pointer	27-7933	.01
⑫	Resistor (16,000 ohms, 3 watt).....	33-316639	.30		AC Cord and Plug.....	L-2183	.00
⑬	Compensator (Osc. 1700 K.C.).....	Part of ④	..		Speaker Cord	L-1474	.15
⑭	I. F. Transformer	32-1313	1.05		Base Shield Plate.....	27-7452	.10
⑮	Compensator (I. F. Sec.).....	0-4000Y	.15		Chassis Mounting Screw.....	W-490-A	2.75C
⑯	Resistor (4 meg.) inside (14).....	35-540339	.20		Chassis Mounting Washer.....	W-315-A	.50C
⑰	Sensitivity Control	0-4000	..		Output Transformer Shield.....	36-3025	.08
⑱	Resistor (1 meg., ½ watt).....	33-510339	.20		Dial	27-5210	1.50C
⑲	Resistor (10,000 ohms, ½ watt).....	33-310339	.20		R.F. Shield Assembly.....	38-5483	.50
Ⓐ	Condenser (.015-.001 mfd. Bakelite).....	7762-EU	.25		Speaker Mounting Screw.....	W-1604	..
Ⓑ	Eliminated by Production Changes.....				Speaker Mounting Nut.....	W-124-A	..
Ⓒ	Resistor (24,000 ohms, ½ watt).....	33-424339	.20		Speaker SB	36-1073	..
Ⓓ	Resistor (490,000 ohms, ½ watt).....	33-449339	.20		Baffle Silk Assembly.....	40-5961	..
Ⓔ	Condenser (.006 mfd. Bakelite).....	7625-SU	.25		Spacer Padder Assem.....	3098	..
Ⓕ	Output Transformer	32-7019	.85		Screw Padder Assem.....	W-614 FA-3	..
Ⓖ	Voice Coil and Cone Assembly.....	36-3157	..		Nut Padder Assemb.....	W-95 FA-3	..
Ⓗ	Field Coil and Pot Assembly.....	36-3243	1.70		Felt Washer Tuning Knob.....	27-7807	..
Ⓖ	Condenser (.015-.015 mfd. Bakelite).....	7762-EU	.40		Pilot Lamp Assem.....	38-7578	..

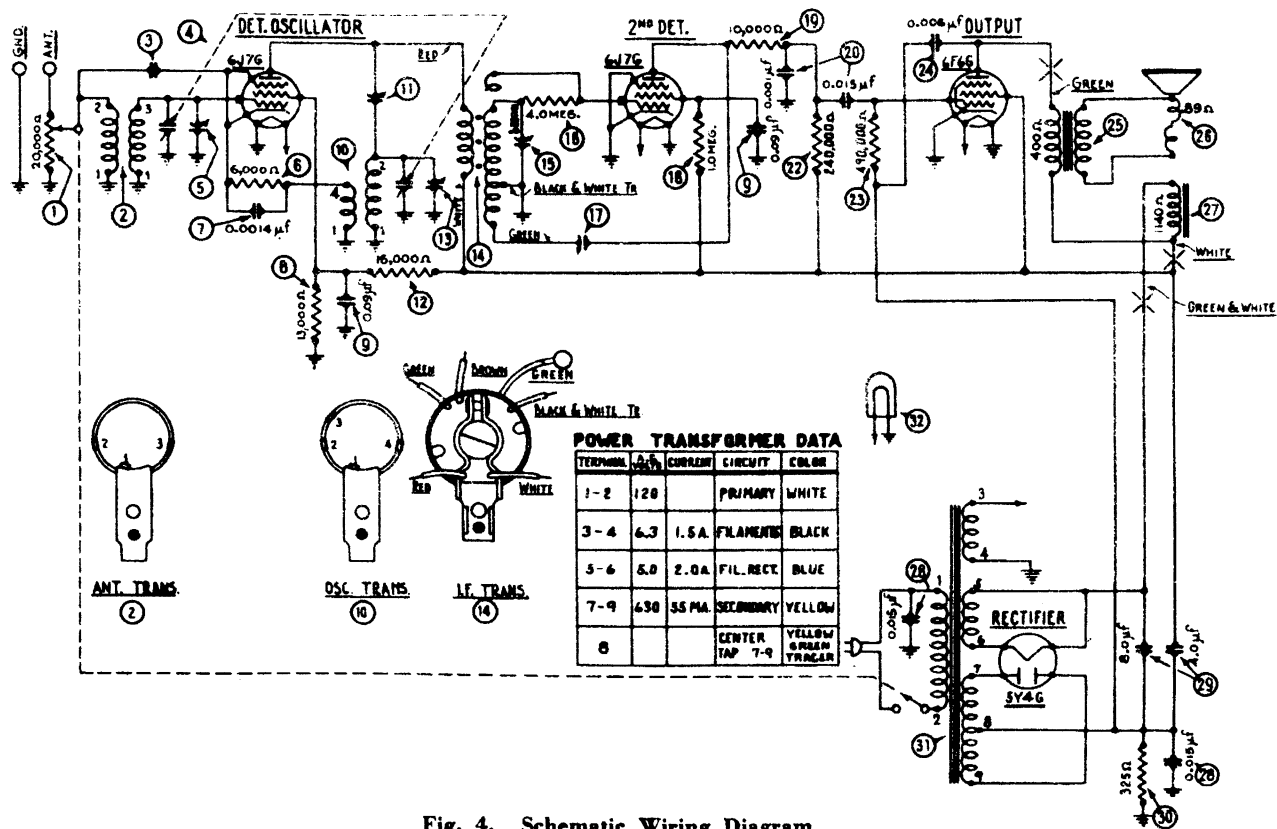


Fig. 4. Schematic Wiring Diagram

PHILCO

Parts and Service Division

Printed in U. S. A.

Electrical Specifications

Type of Circuit: Superheterodyne. Pentode Power Output.

Power Supply: 115 volts A. C. 50 to 60 or 25 to 40 cycles.

Power Consumption: 65 Watts.

Philco Tubes Used: 2 type 6K7G, R. F. and I. F. Circuit; 1 type 6A8G, Detector Oscillator; 1 type 6Q7G, 2nd Detector, A. V. C., and 1st Audio; 1 type 6F6G, Output and 1 type 5Y4G, Rectifier.

Intermediate Frequency: 470 K. C.

Tuning Ranges: Two. Range 1—530 to 1650 K. C. Range 2—1500 to 3700 K. C.

Speaker: S-16.

Power Output: 3 watts.

Aerial Connections: The Philco ALL Wave Aerial is recommended for use with this receiver, to obtain maximum sensitivity and noise reduction. The red and black leads of the "transmission line" (lead-in) are connected to terminals 1 and 2 respectively on the terminal panel provided at the rear of the chassis. Connect the link provided on the terminal panel across terminals 3 and 4.

If a temporary aerial is used, the link is connected across terminals 2 and 3, the aerial connects to terminal 1.

A good ground connection is desirable in all installations. Make the ground connection from the nearest water or radiator pipe to terminal 3 on the terminal panel.

Adjusting Compensator

To accurately adjust this receiver, precision test equipment is necessary. A signal generator such as the PHILCO MODEL 088 Signal Generator, covering from 110 to 20,000 K. C. is recommended for use in adjusting the compensators at the various frequencies specified. A visual indication of the receiver output is also necessary to obtain correct adjustment of the compensators. PHILCO MODEL 025 Circuit Tester contains a sensitive output meter and is recommended for these adjustments.

Philco Fibre Wrench No. 3164 and Fibre Handle Screw-Driver No. 27-7059 complete the necessary equipment for these adjustments. The locations of the various compensators are shown in Figs. 2 and 3.

The following procedure must be observed in adjusting the compensators:

DIAL ADJUSTMENT—The tuning condenser is set at the maximum capacity position, by turning the tuning knob clockwise. Loosen the set screw of dial hub and set dial, with Glowling Indicator centered between the first and second index lines at the low frequency end of scale.

OUTPUT METER--The 025 Output Meter is connected to the plate and cathode terminals of the 6F6G tube. Adjust the meter to use the (0-30) volt scale.

During the I. F. and R. F. adjustment, the signal generator output should be maintained at the lowest possible level that will give an indication on the output meter.

INTERMEDIATE FREQUENCY CIRCUIT

1. Turn selector switch to range 1 (counter-clockwise). Rotate the tuning control to approximately 600 K. C. Connect the 088 Signal Generator output lead through a .1 mfd. condenser to the grid of the 6A8G tube and the output ground lead to the receiver chassis.

2. Set signal generator dial indicator for 470 K. C. Adjust attenuator for approximately $\frac{1}{4}$ scale reading on output meter. Then adjust compensators (20s) 2nd I. F. Sec., (20p) 2nd I. F. Pri., (19s) 1st I. F. Sec., and (19p) 1st I. F. Pri. for maximum reading on output meter.

RADIO FREQUENCY CIRCUIT

Tuning Range 1—530-1650 K. C.

1. Leave selector switch in range 1. Remove the signal generator output lead and .1 mfd. condenser from the grid of the 6A8G tube.

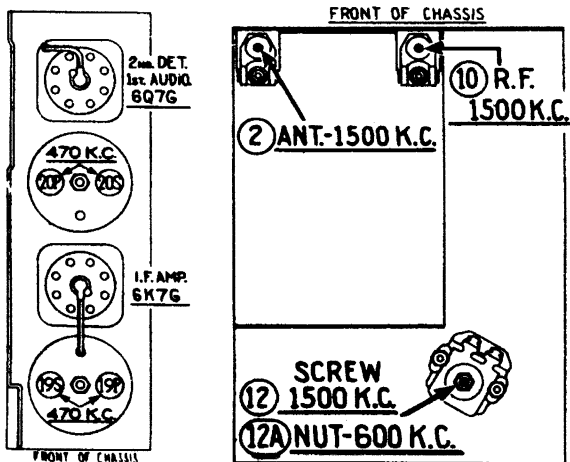


Fig. 2—1. F. Compensator

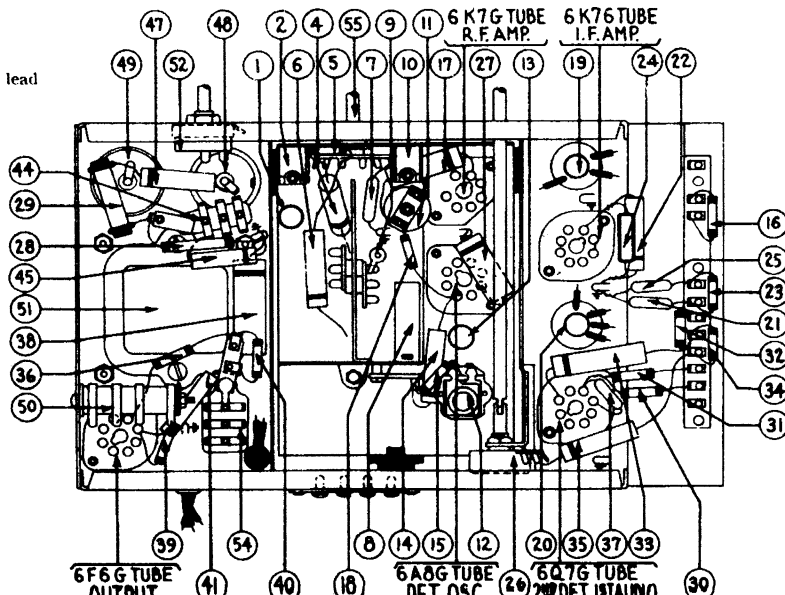


Fig. 4—Base View Chasses

SOCKET VOLTAGES

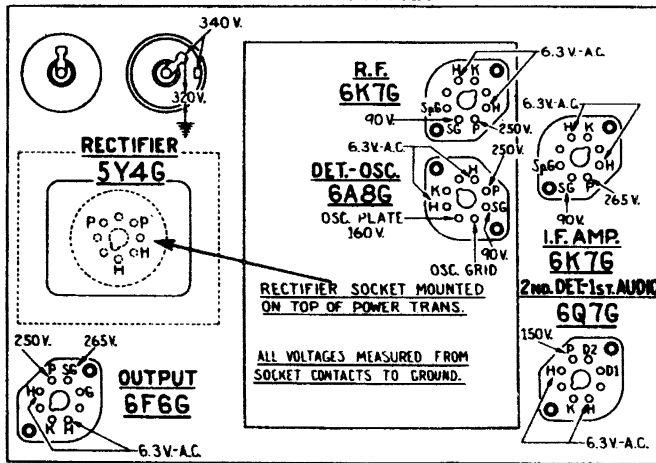


Fig. 1. View of Sockets from Underside Chassis

The voltages indicated by arrows were measured with a **Philco 025 Circuit Tester** which contains a voltmeter having a resistance of 1000 ohms per volt. Volume Control at minimum, range switch in broadcast position, line voltage 115 A. C.

2. Attach the signal generator output lead through the .1 mfd. condenser to the antenna terminal No. 1 on the aerial panel and the generator ground lead to terminal 3. Connect Terminal No. 2 to ground Terminal No. 3 with connector link provided on the panel.

3. Set signal generator and receiver dials for 1500 K. C. Now adjust compensator (2) Osc. (screw), (3) R. F., and (4) Ant. for maximum reading on output meter.

4. The low frequency end of the band is now tuned by turning signal generator and receiver dials to 600 K. C. and adjusting compensator (2) (see note A below) for maximum output.

(A) When compensator @a Osc. series (nut) is being adjusted, the tuning condenser must be rolled for maximum output. This is accomplished as follows:
First tune compensator @a for maximum output at 600 K. C. Then vary the tuning condenser back and forth about the 600 K. C. dial mark for the maximum output point. Now retune compensator @a and again varying the tuning condenser back and forth about 600 K. C. until the maximum output point is reached. This operation of first tuning the compensator, then the tuning condenser is continued until the maximum output is obtained at the 600 K. C. frequency.

5. Turn signal generator and receiver tuning dials to 1500 K. C., then readjust compensators (2) Osc.; (10) R. F.; (3) Ant. for maximum reading on output meter

Tuning Range 2:

1. The compensating condenser adjustments of Band 1, takes care of Band 2 therefore no compensating condensers are required on the band.

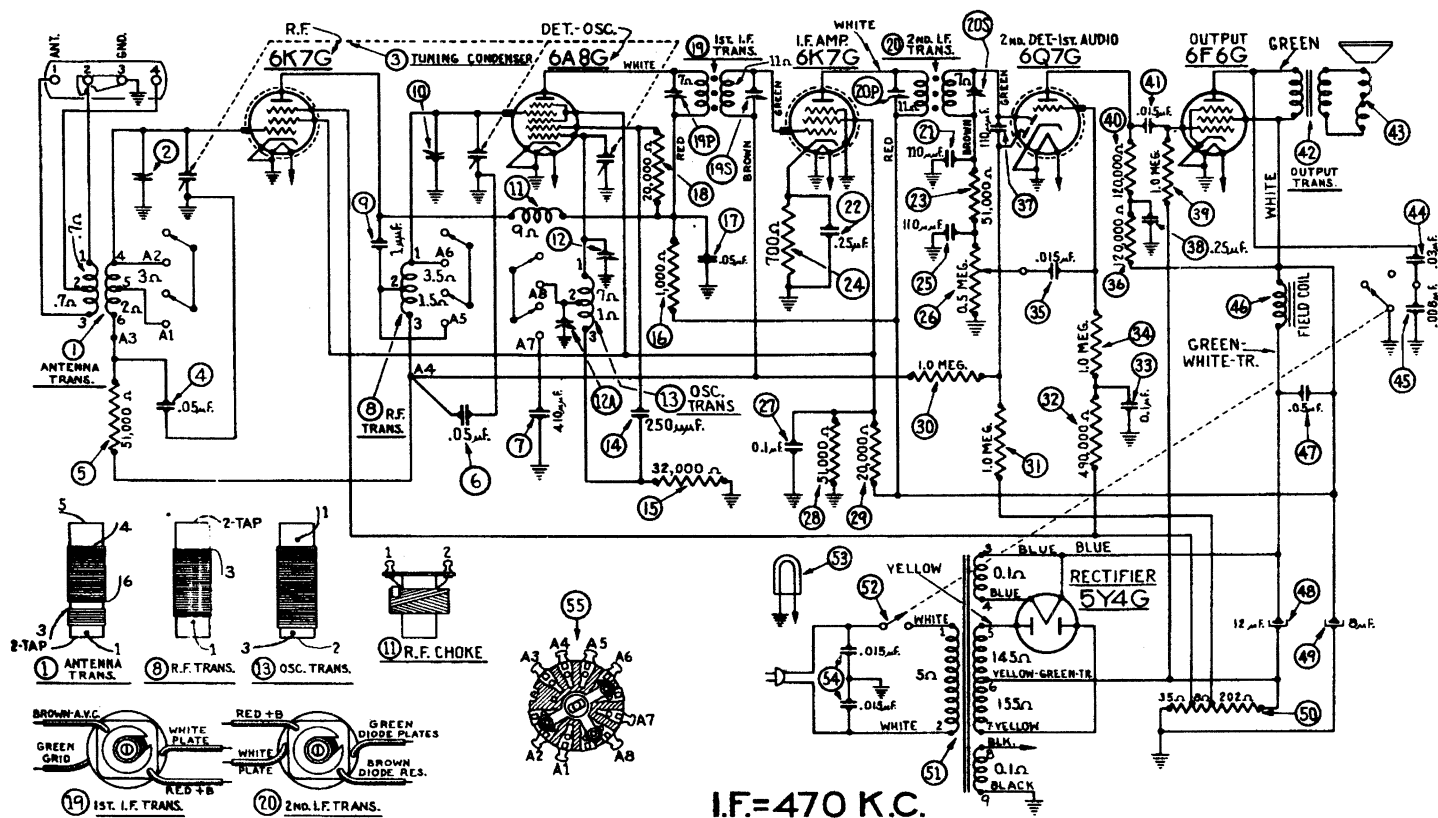


Fig. 5—Schematic Diagram—Model 37-89

Replacement Parts — Model 37-89

Schem. No.	Description	Part No.	List Price	Schem. No.	Description	Part No.	List Price	Schem. No.	Description	Part No.	List Price
1	Antenna Transformer.....	32-2127	\$0.80	35	Condenser (.015 mfd. tubular).....	30-4358	\$0.20	28-4117	Per C	\$0.40	
2	Compensator.....	31-6100	.40	36	Resistor (120000 ohms, ½ watt).....	33-412339	.20	6717	Washer.....	4436	Per C 1.50
3	Tuning Condenser.....	31-1833	4.00	37	Condenser (110 mmfd. mica).....	30-1031	.20	27-4317	Mtg. Grommet.....	28-8610	.03
4	Condenser (.05 mfd. tubular).....	30-4020	.20	38	Condenser (.25 mfd. tubular).....	30-4134	.35	28-2257	Mtg. Washer Sleeve.....	27-8339	Per C .40
5	Resistor (51000 ohms ½ watt).....	33-351339	.20	39	Resistor (1 megohm, ½ watt).....	33-510339	.20	W-729	Mtg. Screw.....	28-3927	Per C .45
6	Condenser (.05 mfd. tubular).....	30-4020	.20	40	Resistor (120000 ohms, ½ watt).....	33-412339	.20	28-3856	R. F. Unit Support.....	28-3975	.01
7	Condenser (410 mmfd.).....	30-1000	.25	41	Condenser (.015 mfd. tubular).....	30-4226	.20	28-3889	Support Locking Plate.....	W-644	Per C 1.50
8	R. F. Transformer.....	32-2128	.60	42	Output Transformer.....	32-7019	.85	27-4321	Knobs Tuning.....	27-4332	.10
9	Condenser Two Wires Twisted.....	31-6100	.40	43	Cone & Voice Coil.....	36-3157	.80	40-5935	Baffle Silk Assembly B, Cabinet.....	40-5933	
10	Compensator.....	32-2139	.35	44	Condenser (.03 mfd. bakelite).....	8318-SU	.35	40-5933	Baffle Silk Assembly F, Cabinet.....	36-1225	5.75
11	Choke.....	31-6101	.20	45	Condenser (.008 mfd. tubular).....	30-4112	.20	W-1604	Screw Speaker Mtg.....	W-291	Per C .40
12	Compensator.....	32-2120	.65	46	Field Coil & Pot Assembly.....	36-3664		W-410	Washer Speaker Mtg.....	W-124	Per C .35
13	Osc. Transformer.....	30-1032	.20	47	Condenser (.05 mfd. tubular).....	30-4020	.20	28-2089	Washer Chassis Mtg.....	40-5938	.10
14	Condenser (250 mmfd. mica).....	33-351339	.20	48	Electrolytic Condenser (12 mfd.).....	30-2117	1.20	27-8311	Bezel Gasket.....	27-8298	.05
15	Resistor (32,000 ohms ½ watt).....	33-210339	.20	49	Electrolytic Condenser (8 mfd.).....	30-2024	1.10	28-3967	Bezel Ring.....	W-1644	Per C .50
16	Resistor (1000 ohms, ½ watt).....	30-4123	.20	50	Bias Resistor (245 ohms, Taps 35 and 43 ohms).....	33-3277	.20	38-7763	I. F. Coil Shield.....	36-1225	.20
17	Condenser (.05 mfd. tubular).....	33-320339	.20	51	Power Transformer (115 volt, 50 to 60 cycle).....	32-7583	4.25	36-1225	Speaker S16 B, F Cabinets.....		
18	Resistor (20000 ohms, ½ watt).....	32-2100	1.50	52	Tone Control & A. C. Switch.....	42-1180	.75				
19	1st I. F. Transformer.....	32-2102	1.50	53	Pilot Lamp.....	34-2039	.15				
20	2nd I. F. Transformer.....	30-1031	.20	54	Condenser (.015, .015 mfd. bakelite).....	3793-DG	.40				
21	Condenser (110 mmfd. mica).....	42-1194	.60	55	Wave Switch.....	27-5204	.35				
22	Condenser (.25 mfd. tubular).....	33-351334	.20		Dial.....	28-7152	.10				
23	Resistor (51000 ohms, ½ watt).....	33-1220	.20		Dial Hub.....	28-2837	.10				
24	Resistor (700 ohm, ½ watt).....	30-1031	.20		Dial Clamp.....	31-1878	.25				
25	Condenser (110 mmfd. mica).....	33-5157	1.00		Screen Bracket & Screen Assembly.....	W-650	Per C .40				
26	Volume Control.....	30-4455	.25		Screw.....	31-1844	.35				
27	Condenser (.01 mfd. tubular).....	33-351439	.20		Vernier Drive.....	38-7706	.35				
28	Resistor (51000 ohms, 1 watt).....	33-320539	.30		Pilot Lamp Assembly.....	27-8320	Per C .40				
29	Resistor (20000 ohms, 2 watt).....	33-449339	.20		Insulator Tone Control.....	W-684	Per C 1.25				
30	Resistor (1 meg. ½ watt).....	30-4122	.20		Nut Tone Control.....	W-1624	Per C .50				
31	Resistor (1 meg. ½ watt).....	33-510339	.20		Lock Washer.....	28-6498	.10				
32	Resistor (49000 ohms ½ watt).....				Volume Control Shaft.....						
33	Condenser (.01 mfd. tubular).....										
34	Resistor (1 megohm, ½ watt).....										

Figures in black type indicate circled figures in base view.

June 1936

PRICES SUBJECT TO CHANGE WITHOUT NOTICE

Printed in U. S. A.

Model 37-116—Codes 121-122

Electrical Specifications

Type Circuit: Superheterodyne, with magnetic tuning; Fidelity-Selectivity control in the intermediate frequency circuit and pushpull class "A" audio output. The Code 122 Receiver uses the Philco Automatic Dial tuning system.

Power Supply: 115 Volts A.C. 50 to 60 cycles. For 25 to 40 cycle operation use power transformer listed in the parts list for this purpose.

Power Consumption: 165 Watts.

Intermediate Frequency: 470 K. C.

Undistorted Output: 15 Watts.

Philco Tubes Used: 4—6K7G; 3—6J5G; 1—6L7G; 1—6N7G; 1—6A8G; 1—6H6G; 2—6B4G; 1—6F6G; 1—5U4G.

Tuning Ranges: Five. Range 1—530 to 1600 K.C.; Range 2—1.58 to 4.75 M.C.; Range 3—4.7 to 7.4 M.C.; Range 4—7.35 to 11.6 M.C.; Range 5—11.5 to 18.2 M.C.

Speaker: "W" High-Fidelity Cathedral type.

Precaution

DO NOT APPLY POWER TO THE RECEIVER WITH THE SPEAKER UNIT DISCONNECTED

Replacing Dial Control Screws

REMOVING CONTROL SCREWS Code 122

A. First remove the tuning knobs, then detach the metal plate, covering the control handle by removing the three screws in the center of the plate.

B. When the metal cover is removed, two screws will be noted holding the indexing handle to the rotary hub. Remove these screws and detach the handle. See Fig. 1.

C. Referring to Fig. 1, five screws will be seen which hold the dial escutcheon to the dial body. Remove these screws and lift the escutcheon from the dial body.

D. After removing the dial cover insert a screw-driver blade into the control (indexing) screw, then push in and turn the control screw until the indexing pin on the side end of the screw is centered in the small semi-circular slot on the housing adjacent to the hole. When the screw is in this position release the tension on the screw-driver and lift the screw from the hole.

NOTE: It may be necessary to move the screw slightly to the right or left to mesh the teeth on the screw with those in the screw hole.

REPLACING THE CONTROL SCREWS

A. Insert the control screw in the screw hole. After it is inserted press the screw in and turn it 180 degrees, until the stop on the side of the screw will be in a position to clear the stopping shoulder in the dial cover hole of this screw. When the screw is in position replace the dial escutcheon and Indexing Handle.

REPLACING THE DIAL OR MASK ARM ASSEMBLY Code 122

To replace the dial or mask arm assembly, remove the chassis from the cabinet. Then remove the tuning knobs, indexing handle, handle cover and dial cover as given in the procedure for the removal of the indexing screw.

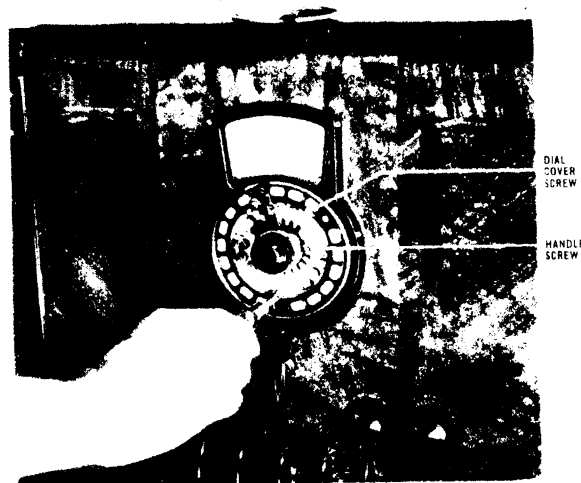


Fig. 1—Automatic Tuning Dial, Code 122, Receiver

With these parts removed the scale may be lifted from the dial housing.

MASK ASSEMBLY Code 122

The removal of the mask and arm assembly necessitates the removal of the two fibre and one metal rings around the outer edge of the dial housing. The mask arm can then be slipped off. Care should be taken on replacing the metal ring to have the spring located along the bottom edge of the ring in position, otherwise the mask will vibrate.

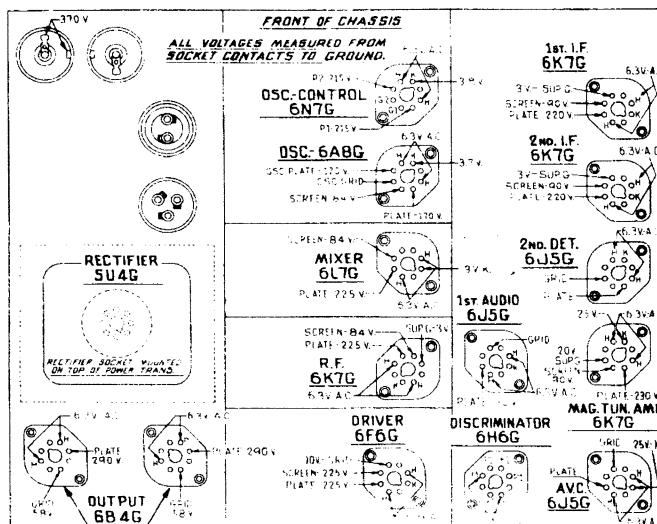


Fig. 2—Socket Voltages, Measured from Underside of Chassis

The voltages indicated by arrows were measured with a Philco 025 Circuit Tester which contains a voltmeter having a resistance of 1000 ohms per volt. Volume Control at minimum, range switch in broadcast position, line voltage 115 A. C.

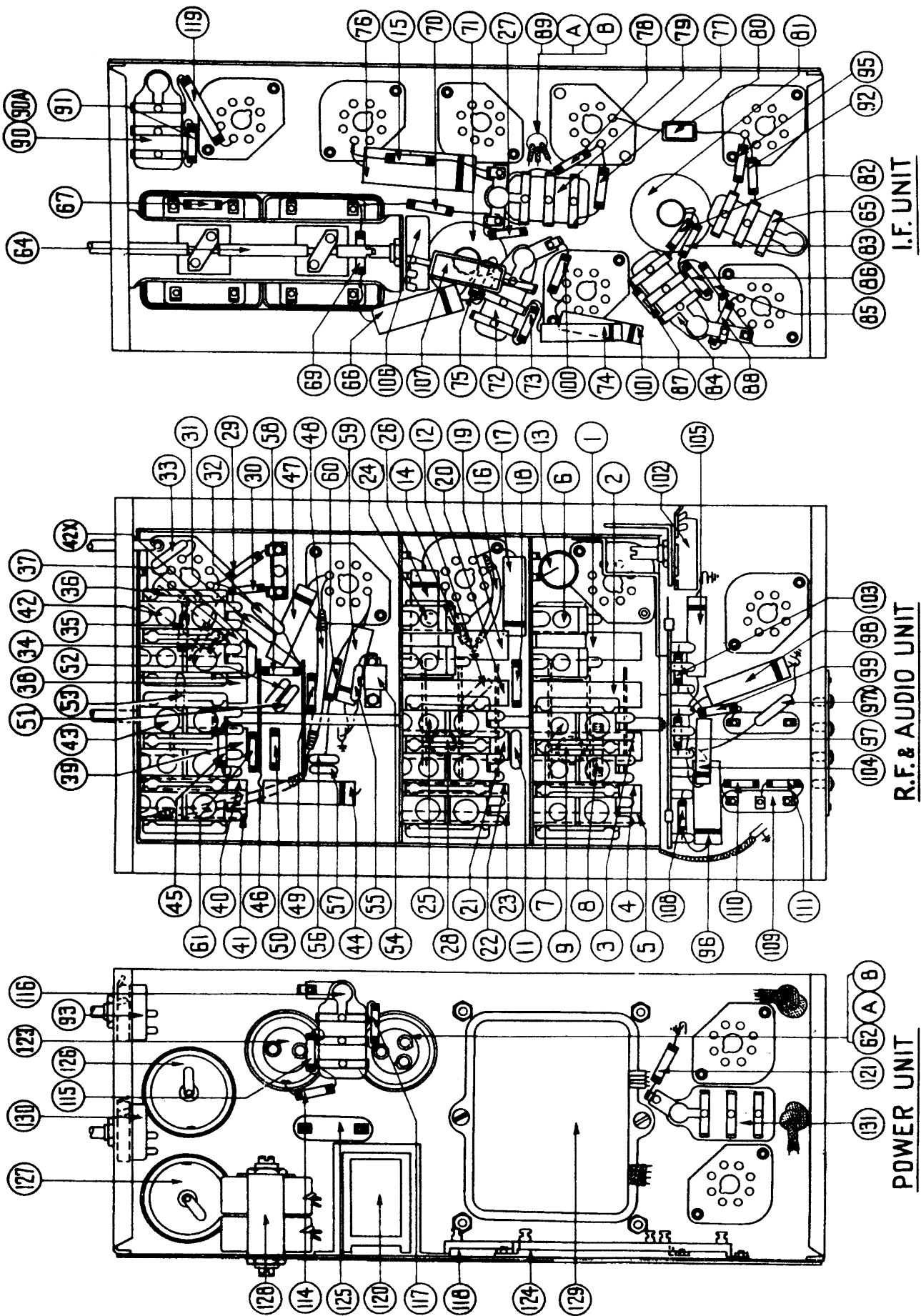


Fig. 3—Parts Locations—Underside of Chassis View

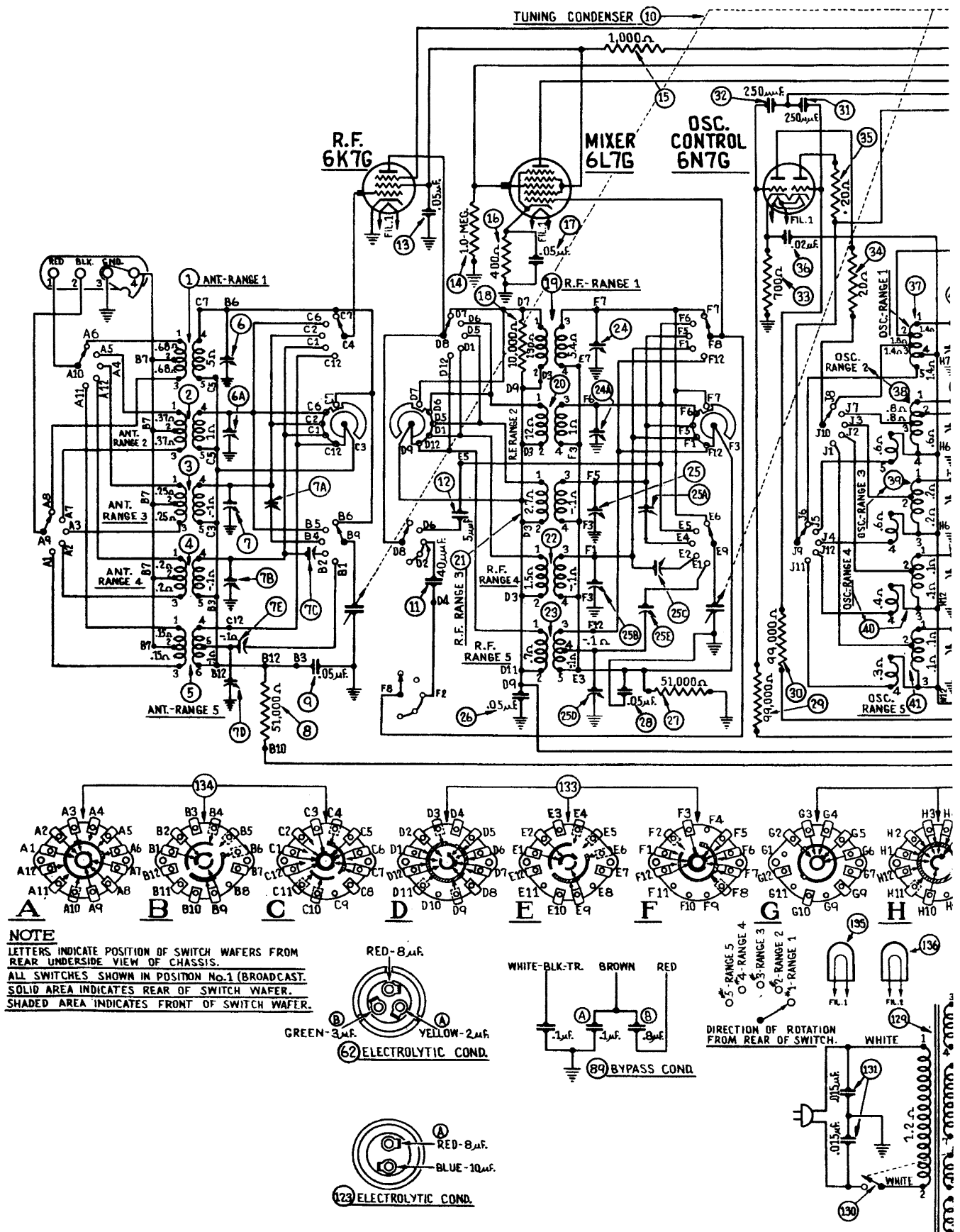


Fig. 4—Schem
 Model 37-116—



Replacement Parts—Model 37-116

Schem. No.	Description	Part No.	List Price	Schem. No.	Description	Part No.	List Price
1	Antenna Transformer (Range 1)	32-2108	\$0.80	119	Resistor (20000 ohms, 1 watt)	33-320439	\$0.20
2	Antenna Transformer (Range 2)	32-2146	.80	120	Choke (Filter)	32-7401	.95
3	Antenna Transformer (Range 3)	32-2183	.60	121	Resistor (18 ohms, 1/2 watt)	33-020439	.20
4	Antenna Transformer (Range 4)	32-2185	.70	122	Field Coil (W. Speaker)	36-3788	
5	Antenna Transformer (Range 5)	32-2175	.80	123	Electrolytic Condenser (8 and 10 mfd.)	30-2123	1.00
6	Compensator, 2 Gang	31-6093	.80	124	Resistor (1000 and 4000 ohms)	33-3289	.50
7	Compensator (6 Sections)	31-6112	1.40	125	Choke (Filter)	32-7056	2.20
8	Resistor (51000 ohms, 1/2 watt)	33-351339	.20	126	Electrolytic Condenser (8 mfd.)	30-2026	1.05
9	Condenser (.05 mfd. Tubular)	30-4020	.20	127	Electrolytic Condenser (8 mfd.)	30-2026	1.05
10	Tuning Condenser	31-1892	3.75	128	Potentiometer (Dual 80 ohms)	33-5178	
11	Condenser (40 mmfd.)	30-1076	.60	129	Power Transformer 115 Volts, 60 Cycle	32-7688	7.50
12	Condenser (50 mmfd.)	30-1077	.60		Power Transformer 115 Volts, 25 to 40 Cycle	32-7689	
13	Condenser (.05 mfd. Tubular)	30-4123	.20		Power Transformer, 220 Volts	42-1196	.75
14	Resistor (1 megohm, 1/2 watt)	33-510339	.20	130	Power and Tone Switch	4989DC	.40
15	Resistor (10900 ohms, 1/2 watt)	33-210339	.20	131	Condenser (.018 mfd. Dual Bakelite)	42-1217	2.00
16	Resistor (400 ohms wirewound)	32-3016	.20	132	Range Switch (Osc.)	42-1212	1.60
17	Condenser (.05 mfd. Tubular)	30-4444	.20	133	Range Switch (R. F.)	42-1211	1.60
18	Resistor (10000 ohms, 1/2 watt)	33-310339	.20	134	Range Switch (Ant.)	34-2039	.15
19	R. F. Transformer (Range 1)	32-2105	.75	135	Pilot Lamp (Codes 121-122)	34-2039	.15
20	R. F. Transformer (Range 2)	32-2147	.80	136	Shadowmeter Lamp (Code 121 only)		
21	R. F. Transformer (Range 3)	32-2177	.60				
22	R. F. Transformer (Range 4)	32-2178	.60				
23	R. F. Transformer (Range 5)	32-2176	.70				
24	R. F. Compensator (2 Section)	31-6093	.40				
25	R. F. Compensator (6 Section)	31-6113	1.40				
26	Condenser (.05 mfd. Tubular)	30-4123	.20				
27	Resistor (1000 ohms, 1/2 watt)	33-351339	.20				
28	Condenser (.05 mfd. Tubular)	30-4020	.20				
29	Resistor (99000 ohms, 1/2 watt)	33-399339	.20				
30	Resistor (99000 ohms, 1/2 watt)	33-399339	.20				
31	Condenser (250 mmfd. Mica)	32-3242	.25				
32	Condenser (250 mmfd. Mica)	30-1032	.25				
33	Resistor (700 ohms wirewound)	33-170339	.20				
34	Resistor (20 ohms, 1/2 watt)	33-020339	.20				
35	Resistor (20 ohms, 1/2 watt)	33-020339	.20				
36	Condenser (.02 mfd. Tubular)	30-4123	.20				
37	Oscillator Transformer (Range 1)	32-2191	.80				
38	Oscillator Transformer (Range 2)	32-2194	.80				
39	Oscillator Transformer (Range 3)	32-2197	.80				
40	Oscillator Transformer (Range 4)	32-2198	.80				
41	Oscillator Transformer (Range 5)	32-2199	.80				
42	Compensator Oscillator (4 Section)	31-6124	1.00				
42X	Condenser (600 mmfd.)	30-1049	.20				
43	Compensator Oscillator (6 Section)	31-6117	1.20				
44	Condenser (.05 mfd. Tubular)	30-4123	.20				
45	Resistor (8000 ohms, 1/2 watt)	33-380339	.20				
46	Resistor (200 ohms wirewound)	7217	.20				
47	Condenser (.02 mfd. Tubular)	30-4481	.20				
48	Resistor (100 ohms wirewound)	33-3023	.25				
49	Resistor (75000 ohms, 1/2 watt)	33-375339	.20				
50	Resistor (2000 ohms, 1/2 watt)	33-320339	.20				
51	Condenser (250 mmfd. Mica)	30-1032	.25				
52	Condenser (600 mmfd. Mica)	30-1049	.25				
53	Condenser (600 mmfd. Mica)	30-1049	.25				
54	Coil (Osc. Plate)	32-3242	.25				
55	Condenser (200 mmfd. Mica)	30-1047	.25				
56	Condenser (55 mmfd. Mica)	30-1045	.20				
57	Condenser (25 mmfd. Mica)	30-1067	.20				
58	Resistor (10000 ohms, 1/2 watt)	33-310339	.20				
59	Condenser (.01 mfd. Tubular)	30-4123	.20				
60	Resistor (3200 ohms, 1/2 watt)	33-332339	.20				
61	Resistor (20000 ohms, 1/2 watt)	33-320339	.20				
62	Electrolytic Condenser (2, 3, 8 mfd.)	30-2189	1.60				
63	Condenser (.05 mfd. Tubular—Code 121 only)	30-4123	.20				
64	Expander Unit	4989EG	.35				
65	Condenser (.1 mfd. Bakelite)	30-4123	.20				
66	Condenser (.05 mfd. Tubular)	30-4123	.20				
67	Resistor (1000 ohms, 1/2 watt)	33-210339	.20				
68	Shadowmeter	4982189	.20				
69	Resistor (1000 ohms, 1/2 watt)	33-210339	.20				
70	Resistor (1000 ohms, 1/2 watt)	33-210339	.20				
71	Third I. F. Transformer	32-2215	.25				
72	Condenser (110 mmfd. Dual Bakelite)	8035DG	.25				
73	Resistor (51000 ohms, 1/2 watt)	33-351339	.20				
74	Condenser (.018 mfd. Tubular)	30-4123	.20				
75	Resistor (160,000 ohms, 1/2 watt)	33-416339	.20				
76	Condenser (.25 mfd. Tubular)	30-4134	.25				
77	Resistor (500 ohms, 1/2 watt)	33-150339	.20				
78	Resistor (4000 ohms, 1/2 watt)	33-240339	.20				
79	Condenser (.05 mfd. Dual Bakelite)	30-4123	.20				
80	Condenser (110 mmfd. Mica)	30-1031	.20				
81	Magnet Tuning Transformer	32-2217	.20				
82	Resistor (490,000 ohms, 1/2 watt)	33-449339	.20				
83	Resistor (490,000 ohms, 1/2 watt)	33-449339	.20				
84	Condenser (110 mmfd. Dual Bakelite)	8035DG	.25				
85	Resistor (490,000 ohms, 1/2 watt)	33-449339	.20				
86	Resistor (1 meg. ohm, 1/2 watt)	33-510339	.20				
87	Resistor (1 meg. ohm, 1/2 watt)	33-510339	.20				
88	Resistor (490,000 ohms, 1/2 watt)	33-449339	.20				
89	Condenser (Three section 1, 1, 8 mfd.)	30-4466	1.40				
90	Condenser (.01 mfd. Dual Bakelite)	30-4123	.20				
91	Resistor (20,000 ohms, 1/2 watt)	33-320339	.20				
92	Resistor (1.0 meg., 1/2 watt)	33-510339	.20				
93	Switch (Max. Tuning)	42-1216	.75				
94	Flood Lamp (Code 122)	34-2039	.20				
95	Resistor (490,000 ohms, 1/2 watt)	33-449000	.20				
96	Condenser (.05 mfd. Tubular)	30-4123	.20				
97	Resistor (51,000 ohms, 1/2 watt)	33-351339	.20				
97X	Condenser (110 mmfd. Mica)	30-1031	.20				
98	Condenser (.05 mfd. Tubular)	30-4123	.20				
99	Resistor (99,000 ohms, 1/2 watt)	33-399339	.20				
100	Resistor (1 meg., 1/2 watt)	33-510339	.20				
101	Condenser (.01 mfd. Tubular)	30-4124	.25				
102	Volume Control	32-5158	1.00				
103	Resistor (70,000 ohms, 1/2 watt)	33-370339	.20				
104	Condenser (.008 mfd. Tubular)	30-4112	.20				
105	Condenser (.008 mfd. Tubular)	30-4445	.20				
106	Potentiometer (Expander unit)	33-5172	.20				
107	Condenser (100 mmfd. Mica)	30-1035	.20				
108	Resistor (240,000 ohms, 1/2 watt)	33-424339	.20				
109	Input Audio Transformer	32-7057	3.50				
110	Resistor (25,000 ohms, 1/2 watt)	33-325339	.20				
111	Resistor (25,000 ohms, 1/2 watt)	33-325339	.20				
112	Output Transformer	32-7117	2.00				
113	Cone and Voice Coil	36-3647	2.25				
114	Resistor (330,000 ohms, 1/2 watt)	33-433339	.20				
115	Resistor (160,000 ohms, 1/2 watt)	33-416339	.20				
116	Condenser (.1 mfd. Dual Bakelite)	4989DG	.40				
117	Resistor (51,000 ohms, 1/2 watt)	33-351339	.20				
118	Resistor (14,000 ohms, 1/2 watt)	33-3291	.20				

USED ON CODES 121-122

Dial Screen Holder Assembly	31-1900	.30
Coupling Assembly (Tuning Condenser)	31-1907	
Screw	W-650	
Set Screw	W-644	
Brace (Drive Mtg.)	28-4119	.05
Volume Control Shaft	38-8061	
Retaining Clip	28-4394	
Spring	28-4117	Per C .40
Shaft & Index Plate (Range Switch)	42-1208	.50
Socket (8 Prong)	27-4058	.11
Socket (7 Prong)	27-4057	.11
Socket (Power Transformer)	27-4061	
Tube Shield	28-2726	.10
Tube Shield Base	28-3898	.03
Tube Shield (6N7G)	8005	.05
Tube Shield Base (6N7G)	8004	.03
Mtg. Grommet (R. F. Unit)	27-8317	.01
Mtg. Sleeve (R. F. Unit)	28-2257	.01
Mtg. Screw (R. F. Unit)	W-729	Per C .45
Mtg. Spacer (R. F. Unit) Code 121	27-8339	Per C .40
Mtg. Spacer (R. F. Unit) Code 122	27-7807	
Mtg. Washer	28-3927	.01
Mtg. Rubber Tuning Condenser	27-4325	
Mtg. Spring Shadowmeter	28-8623	Per C .70
Mtg. Plate (R. F. Transformer)	28-3808	.02
Mtg. Spacer (R. F. Transformer)	27-8228	
Mtg. Screw (R. F. Transformer)	W-1635	Per C .30
Terminal Panel Antenna	38-7714	.15
Terminal Cover (Speaker)	36-3672	.15
Knob	27-4340	.10
Knob	27-4331	.10
Knob	27-4332	.10
Cable (Speaker)	41-3220	.50
A. C. Plug and Cord	L-2288	
Fuses	45-2046	
Chassis Mtg. Rubber	3558	
Rubber Bushing (Small)	27-4359	
Rubber Bushing (Large)	27-4360	
Speaker, W.	36-1319	
Speaker, F.	27-8498	
Acoustic Clarifier (Type K)	36-1155	
Bottom Shield	38-8142	
Snap Fasteners	28-4279	
Pilot Lamp Assembly	38-7909	.40

CODE 121

Dial	27-5249	.40
Hub	28-7187	.13
Clamp	28-2837	.10
Set Screw	W-1641	.02
Gear (Dial)	28-7185	.10
Gear Drive	31-1894	
Thrust Spring	28-8311	.01
Washer	28-3976	Per C .30
C Washer	28-3904	.01
Mask	27-5206	.20
Mask Arm and Link Assembly	31-1899	.50
Mask Cover	27-8318	.50
Mask Guide and Bracket	38-7876	Per C .25
Drive Mounting Assembly	31-1901	
Vernier Drive	31-1895	
Bezel Frame and Plate Assembly (Cabinet)	40-5948	.80
Glass	27-8300	.06
Ring	28-3988	.45
Gasket	27-8313	.01

CODE 122

Auto Dial Tuning Assembly Complete	31-1886	
Dial Scale	27-5207	
Gasket (Dial Scale)	27-8398	
Mask and Link Assembly	45-2328	
Mask Guide	28-4118	
Ring (Retaining Mask Assembly)	28-7185	
Spring (Retaining Mask Assembly)	28-8629	
Indexing Plunger	31-1898	
Plunger Stop and Switch Assembly	45-2330	
Range Switch Shaft Coupling	28-7198	
Felt Washer	27-8399	
Washer	W-495	
Snap Fastener	28-4279	
Indexing Handle	45-2329	
Handle Cover	28-4077	
Set Screw	28-4493	
Screws (Cover)	W-1669	
Dial Facutcheon Assembly	45-2324	
Flood Lamp Assembly	38-7937	
Bezel Frame and Plate Assembly (Cabinet)	40-5980	
Bezel Gasket	27-8517	
Screw	W-480	
Station Tab Kit	40-6013	

Figures in black type indicate circled figures in Base View.

Prices Subject to Change without Notice.

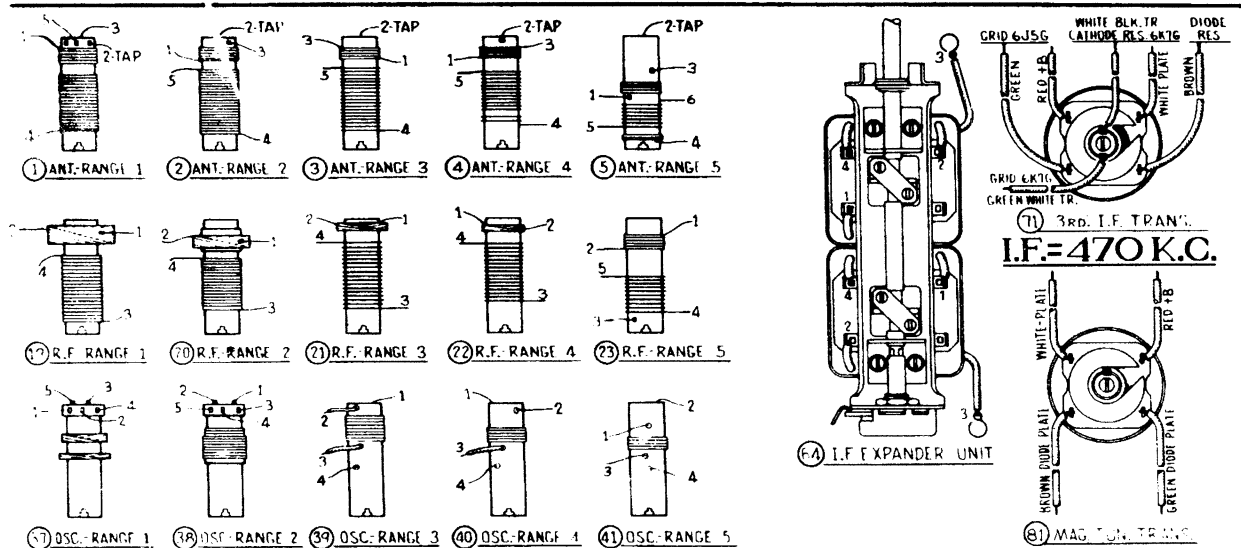


Fig. 5—Coil Wiring

The numbers on the coil leads correspond to those shown on the schematic diagram. For example: On Antenna transformer (1) lead No. 1 is connected to range switch wafer contact A6.

HUM ADJUSTMENT

With Volume control at minimum volume position, adjust Potentiometer (128) on power unit for minimum hum.

SHADOWMETER ADJUSTMENT

Code 121

Remove aerial and allow tubes to warm up. Then adjust shadow meter as follows:

1. Move the shadow meter coil backwards and forwards, until the opposite edges of the shadow are $\frac{1}{4}$ of an inch from each end of the shadow screen, measuring along the bottom edge of the screen. Adjustment of the shadow meter light bracket may be necessary for perfect centering.

2. Remove the rectifier tube from its socket, and rotate coil until shadow reaches minimum width. This width must not exceed $\frac{1}{4}$ of an inch.

3. Replace the 5U4G rectifier tube in its socket. The shadow should then widen to not more than $\frac{1}{4}$ inch or less than $\frac{1}{4}$ inch from each side of the screen measuring along the bottom edge. If these limits are not obtained readjust the shadow meter as given in paragraphs 1 and 2 until they are reached.

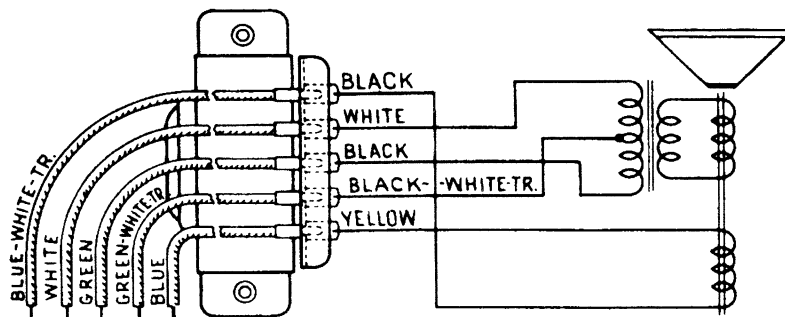


Fig. 6—Speaker Wiring

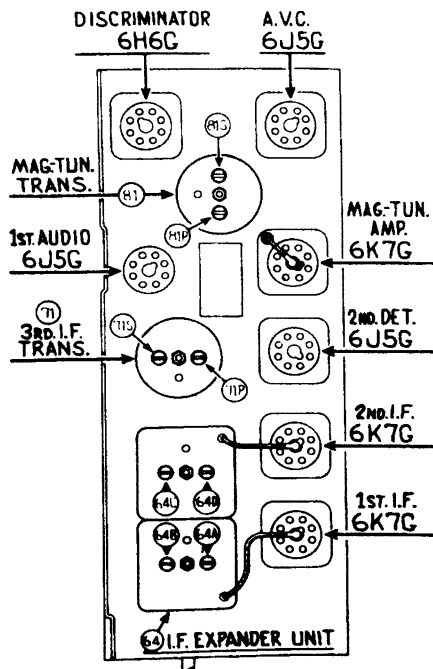


Fig. 7—Locations of I.F. Compensators
Top of I.F. Unit

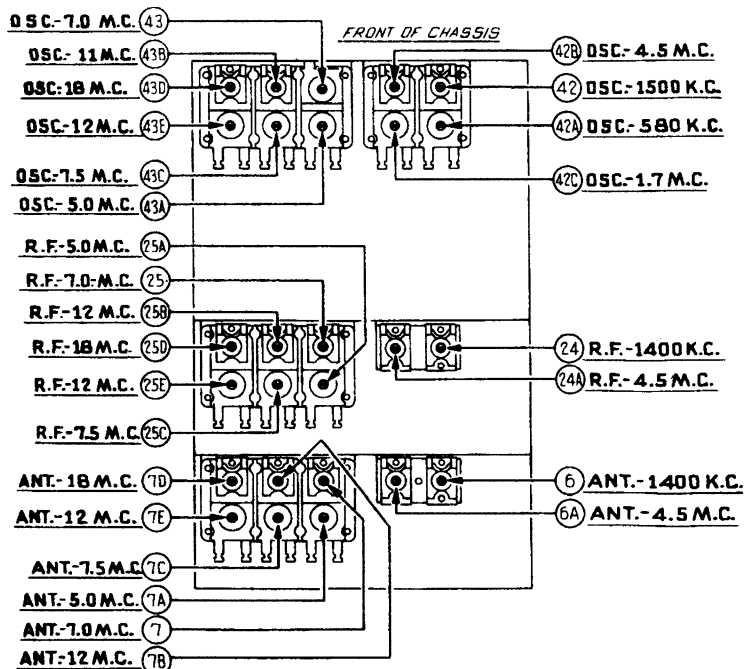


Fig. 8—Locations of R.F. Compensators
Underside of Chassis View

Alignment of the Compensators

To accurately adjust this receiver, precision test equipment is necessary. A signal generator such as the PHILCO MODEL 088 SIGNAL GENERATOR, covering from 110 to 20,000 K. C. is recommended for adjusting the compensators at the various frequencies specified. A visual indication of the receiver output is also necessary to obtain correct adjustment of the compensators. PHILCO MODEL 025 CIRCUIT TESTER contains a sensitive output meter and is recommended for these adjustments.

Philco Fibre Handle Screw-driver No. 27-7059 completes the necessary equipment for these adjustments. The locations of the various compensators are shown in Figs. 7 and 8.

NOTE—The receiver should be allowed to heat for at least 15 minutes before adjusting the compensators.

OUTPUT METER

The 025 Output Meter is connected to the plate and cathode terminals of the 6F6G tube. Adjust the meter to use the (0-30) Volt Scale.

DIAL CALIBRATION

In order to adjust this receiver correctly the dial must be aligned to track properly with the tuning condenser. To do this proceed as follows:

1. Loosen the set screws on the shaft coupling of the tuning condenser. Then turn the tuning condenser until the plates are in the maximum capacity position. Now set the glowing beam indicator on the index line at the low frequency end of the broadcast band. With dial and tuning condenser in this position tighten set screws.

2. Turn the tuning condenser control until the indicator is on the first division from the index line.

3. With the dial in this position, loosen the shaft coupling set screws. Then turn the dial until the indicator is again on the index line. Tighten the set screws in this position.

NOTE: Be careful when turning the dial that the position of the tuning condenser is not disturbed.

INTERMEDIATE FREQUENCY CIRCUIT

Frequency 470 K. C.

1. Connect the 088 Signal Generator output lead in series with a .1 mfd. condenser to the grid of the 6L7G tube, and the ground connection of the output lead to the chassis.

2. Set the receiver volume control in the maximum position. Turn the fidelity-selectivity control clockwise; magnetic tuning control in the "off" position (counter-clockwise); range switch in position No. 1 (Broadcast); tuning condenser to approximately 580 K. C., and adjust the signal generator for 470 K. C.

3. Now adjust compensators (64B) 1st I.F. Sec., (64A) 1st I.F. Pri., (64D) 2nd I.F. Sec., (64C) 2nd I.F. Pri., (71S) 3rd I.F. Sec., and (71P) 3rd I.F. Pri. for maximum output.

4. Turn the fidelity-selectivity control to the expanded position (counter-clockwise). The intermediate frequency curve is now checked for symmetry as follows: Slowly shift the signal generator dial between 460 K. C. and 480 K. C. As the dial is turned two peaks will be indicated on the output meter—one about 465 K. C., and the other about 475 K. C. These peaks should give the same deflection or reading on the output meter. If they are unequal, compensator (71S) must be readjusted slightly to the right or left—depending on which peak gives the lowest reading—until they are equalized.

Each time the compensator is set in another position, rotate the signal generator dial through 460 to 480 K. C. and note the reading of each peak on the output meter. If the peaks become more equal when compensator (71S) is turned to the left, continue in this direction until they are equal. If they become more unequal turn the compensator to the right. Continue this adjustment in either direction until the peaks equalize.

5. After adjusting the third I.F. transformer, turn the fidelity-selectivity control clockwise (selective position) and adjust the attenuator of the signal generator for maximum output. Now tune the primary compensator (81P) of the magnetic tuning transformer for minimum output.

RADIO FREQUENCY CIRCUIT

Tuning Range 11.5-18.2 M. C.

1. The signal generator output lead with the .1 mfd. condenser, is connected to terminal No. 1 on the aerial input panel (rear of chassis) and the generator ground lead to terminal No. 3. Terminals 2 and 3 must be connected with the shorting link provided on the panel.

2. Set the magnetic tuning control in the "off" position, and the fidelity-selectivity control in the extreme clockwise position. Set the range switch in position No. 5 (11.5 to 18.2 M. C.). Turn the receiver and signal generator dials to 18 M. C. and adjust the generator attenuator for a readable indication on the output meter. Now adjust compensator (43D) by turning the screw (clockwise) to the maximum capacity position, then slowly turn it counter-clockwise until a second maximum peak is reached on the output meter. The first peak from maximum capacity is the image signal and the receiver must not be adjusted to this signal. On some receivers, however, only one peak will be found, therefore, adjust compensator (43D) to this peak. If the above procedure is correctly performed, the image signal will be found at 17.060 M. C. by advancing the signal generator input, and turning the receiver dial to this frequency mark on the scale.

3. Leaving the signal generator and receiver dials at 18 M. C. the antenna and R. F. compensators (7D) and (25D) are now adjusted by connecting a variable condenser (Philco Part No. 45-2325) across the oscillator compensator (43D) contact (first contact from the left side of the receiver facing rear underside view of the chassis) and ground. Now tune the added condenser until the second harmonic of the receiver oscillator beats against the signal from the generator, resulting in a maximum indication on the output meter. Note: It may be necessary to increase the signal generator output to obtain a signal of sufficient strength for reading on the output meter. Compensators (7D) and (25D) are now adjusted for maximum output. After these adjustments, remove the external condenser and readjust compensator (43D) as given in paragraph 2 above.

4. Turn the signal generator and receiver dials to 12 M. C. and adjust compensators (43E), (25E) and (7E) for maximum output.

5. Readjust compensator (43D) as given in paragraph 2 above, for maximum output.

6. Readjust compensators (7D), (25D) and (43D) as given in paragraph 3 above. This readjustment is to correct any variation that the low frequency compensator may have caused in the high end of this range.

Tuning Range (7.35-11.6 M. C.)

1. Turn selector switch to Range 4. Set the signal generator and receiver dials to 11.0 M. C. Now adjust compensator (43B) for maximum output. Check for image at 10.06 M. C.

2. Leaving signal generator and receiver dial turned to 11.0 M. C., connect the external variable condenser across the oscillator compensator (43B) contact (third contact from left side of the receiver facing rear underside view of chassis) and ground. Tune the added condenser for maximum output, then adjust compensators (7B) and (25B) for maximum output. Remove the added condenser and adjust (43B) for maximum.

3. Turn the signal generator and receiver dials to 7.5 M. C. and adjust compensators (43C), (25C) and (7C) for maximum output.

4. Readjust compensator (43B) as given in paragraph 1 above.

5. Readjust compensators (7B), (25B) and (43B) as given in paragraph 2 above.

Tuning Range (4.7 to 7.4 M. C.)

1. Turn selector switch to range 3. Set the signal generator and receiver dials for 7.0 M. C. and adjust compensators (43), (25) and (7) for maximum output.

2. Rotate the signal generators and receiver dials to 5.0 M. C., then adjust compensators (43A), (25A) and (7A) for maximum output.

3. Readjust compensators (43), (25) and (7) on the 7.0 M. C. signal.

Tuning Range (1.58 to 4.75 M. C.)

1. Turn the selector switch to range 2. Set the signal generator and receiver dials to 4.5 M. C. Now adjust compensators (42B), (24A) and (6A) for maximum output.

2. Rotate the signal generator and receiver dials to 1.7 M. C. Compensator (42C) Osc. series is now adjusted for maximum output as follows:

First tune compensator (42C) for maximum output, then vary the tuning condenser of the receiver for maximum output about the 1.7 M. C. dial mark. Now turn compensator (42C) slightly to the right or left and vary the receiver tuning condenser for maximum output. If the output reading increases, turn compensator (42C) in the same direction a trifle more, and again vary the tuning condenser for maximum output. If the output decreases, set the compensator in the opposite direction. This procedure of first setting the compensator and then varying the tuning condenser is continued until there is no further gain in output reading.

3. Readjust compensators (42B), (24A) and (6A) for maximum output as given in paragraph 1 above.

Tuning Range (530 to 1600 K. C.)

1. Set selector switch in range 1. Rotate the signal generator and receiver dial to 1500 K. C. Adjust compensators (42), (24) and (6) for maximum output.

2. Turn the signal generator and receiver dials to 580 K. C. Compensator (42A) Osc. series is now adjusted, using the same procedure as given in paragraph 2 under Tuning Range (1.58 to 4.75 M. C.). The only difference in the two adjustments is the frequency and compensator used.

3. Readjust compensator (42) on 1500 K. C. and compensators (24) and (6) on a 1400 K. C. signal.

ADJUSTMENT OF THE MAGNETIC TUNING CONTROL

1. Leave the selector switch in position 1. Set the fidelity-selectivity control in the "selective" position (clockwise). Magnetic tuning in the "out" position. Turn the signal generator and dial to 1000 K. C., then adjust the receiver tuning condenser for maximum output.

NOTE: It is very important to accurately adjust the receiver tuning condenser, also, adjust the signal generator attenuator to maximum output.

2. Turn the (Magnetic Tuning Control) to the "on" position (clockwise). Compensator (81S) Sec. of magnetic tuning transformer is now adjusted for maximum output. If the indicator of the output meter goes off scale, turn the volume control of the receiver toward the minimum position until a readable indication is obtained.

3. The above adjustment is now checked for accuracy, by turning the magnetic tuning control "off". When this is done there should be no change in the tone of the receiver signal. If a change of tone or a hiss develops, it indicates a shift in frequency and the adjustment must be made again.

Model 37-600

Specifications

TYPE CIRCUIT: Superheterodyne with pentode output.
POWER SUPPLY: 115 V., 60 cycle A.C.
TUBES USED: 1 type 6A8G, Det. Osc., 1 type 6J7G, 2nd Det., 1 type 6K6G, Output, 1 type 5Y4G Rectifier.
FREQUENCY RANGE: 530-1800 K.C.
INTERMEDIATE FREQUENCY: 470 K.C.
CURRENT CONSUMPTION: 45 watts.
SPEAKER: B-6.
POWER OUTPUT: 1/2 watt.

Adjusting Compensating Condensers

To accurately adjust the compensating condensers in the Model 37-600 receiver, it is necessary to use a signal generator of high stability on all frequencies, such as the PHILCO Model 088 Signal Generator. This instrument has a continuous frequency range from 110 to 20,000 K.C., and is designed to meet every requirement of the serviceman.

An output meter is also needed.—PHILCO MODEL 025 Circuit Tester includes a very sensitive output meter.

Convenient tools to use in adjusting the compensators are the Philco No. 3164 Fibre Wrench and No. 27-7059 Fibre Handled Screw-driver.

The locations of the various compensating condensers are shown in Fig. 1. Connect the output meter to the plate and cathode contacts of the 6K6G power tube, and adjust it to use the 0-30 volt range.

When adjusting each circuit, care should be taken to have the signal generator attenuator set for approximately 1/4 scale reading on output meter.

Intermediate Frequency Circuit

1. Connect the 088 signal generator output lead through a .1 mfd. condenser to the grid of the 6A8G tube and the ground lead to the chassis.
2. Turn the sensitivity compensator ② to maximum capacity position (clockwise), and then release it; 1 1/2 turns (counter-clockwise).
3. Turn gang condenser to approximately 600 K.C. Set the signal generator at 470 K.C.
4. Adjust the compensator ⑬ and ⑭ for maximum reading on the output meter. Then turn the sensitivity compensator ② clockwise until a hiss, (oscillation) is heard. Now turn the compensator ② counter-clockwise until hiss ceases, then continue for 1/4 turn more.

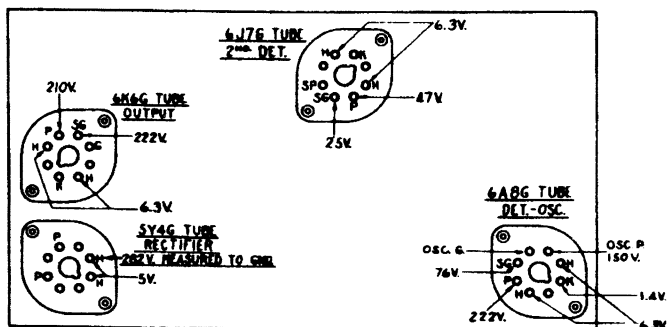


Fig. 2. Tube Sockets as Viewed from Underside of Chassis. (Measured from Socket Terminal to Ground Volume Control in Maximum Position)

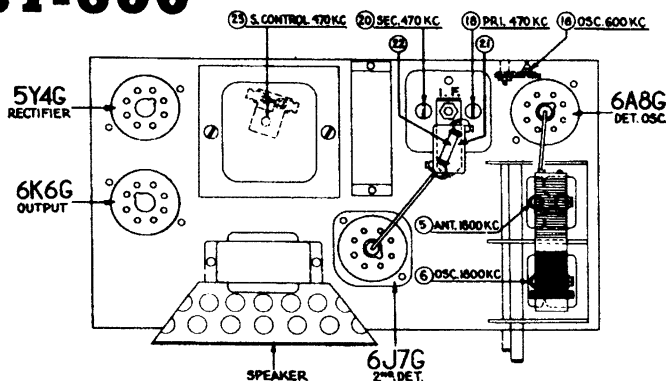


Fig. 1. Location of Compensators

Radio Frequency Circuit

1. Remove the signal generator output lead from the 6A8G tube, and connect it to the aerial lead of the receiver through a 100 mmfd. condenser.
2. Turn the gang condenser to minimum capacity position, (counter-clockwise) and place a .006" (six-thousandths inch) gauge between the stator and rotor plates. Now turn the gang clockwise until stator and rotor plates touch gauge.
3. Remove gauge from gang condenser. Now set signal generator at 900 K.C., (using second harmonic 1800 K.C.), adjust compensators ④ and ⑤ for maximum reading on output meter.
4. Turn the signal generator and receiver gang condenser to 600 K.C., and adjust compensator ⑨. In doing so, the gang condenser must be rolled slightly above and below the 600 K.C. signal until the maximum reading is indicated on the output.
5. Turn the gang condenser to 1800 K.C. and signal generator to 900 K.C., (using second harmonic of signal generator 1800 K.C.), readjust compensator ④ for maximum reading on output meter. Set gang as per paragraph 2, for this adjustment.
6. Turn the gang condenser and signal generator to 1400 K.C., readjust compensator ⑤ for maximum reading on output meter. After the above adjustments are completed and receiver is placed in the cabinet, the dial pointer is properly placed by turning the signal generator to 1000 K.C. Then tune receiver for maximum signal. The dial pointer is then placed on gang shaft, so that it indicates 1000 K.C. on dial.

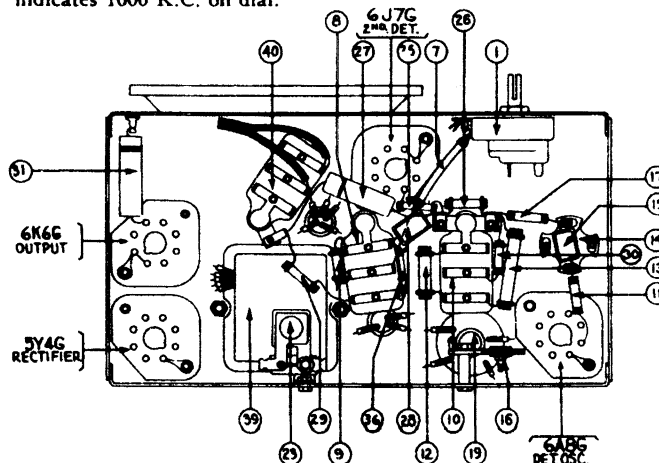


Fig. 3. Base View

Replacement Parts for Model 37-600

Schematic Number	Part and Description	Part No.	Price List	Schematic Number	Part and Description	Part No.	Price List	Schematic Number	Part and Description	Part No.	Price List
(1)	Volume Control	33-5152	\$1.45	(20)	Compensator (I.F. Sec.) (460 K.C.)	Part of (19)	...		Power Transformer (230 V., 50-60 Cycle)	32-7554	...
(2)	Condenser (35 Mmf. Mica)	30-1044	.20	(21)	Condenser (50 mmf. Mica)	30-1029	.20		Power Transformer (110 V., 25 Cycle)	32-7553	5.75
(3)	Ant. Transformer	32-2144	1.40	(22)	Resistor (1.5 meg., 1/4 watt)	33-515139	.20		Tube Shield Body	28-2726	.10
(4)	Tuning Condenser	31-1794	3.00	(23)	Sensitivity Compensator	31-6086	.45		Tube Shield Base	28-3898	.03
(5)	Compensator (Det. K.C.)	Part of (1)	...	(24)	Condenser (.09 mf.)	Part of (19)	...		Tube Socket (7-prong)	27-6057	.11
(6)	Compensator (Osc. K.C.)	Part of (1)	...	(25)	Resistor (10,000 ohm, 1/4 watt)	33-310339	.20		Tube Socket (8-prong)	27-6058	.11
(7)	Resistor (300 ohm)	33-3010	.20	(26)	Resistor (240,000 ohm, 1/2 watt)	33-424339	.20		Tube Socket (5-prong)	27-6053	.11
(8)	Condenser (.05 mf. Twin Bake-lite)	3615-DG	.40	(27)	Condenser (.01 mf.)	30-4169	.20		Volume Control Mtg. Nut	W-648-A	20C
(9)	Resistor (4900 ohm, 1/2 watt)	33-249339	.20	(28)	Condenser (.00025 mf.) Mica	30-1032	.25		Chassis Mtg. Screw	W-1656-A	75C
(10)	Condenser (.09 mf. Twin Bake-lite)	4989-DG	.40	(29)	Resistor (750,000 ohm, 1/4 watt)	33-475339	.20		Chassis Mtg. Nut	W-124-A	35C
(11)	Resistor (51,000 ohm, 1/2 watt)	33-351339	.20	(30)	Resistor (10 meg., 1/4 watt)	33-510339	.20		Chassis Mtg. Washer	W-151-A	15C
(12)	Resistor (25,000 ohm, 1/2 watt)	33-325339	.20	(31)	Condenser (.02 mf.) (Tubular)	30-4113	.20		Chassis Mtg. Washer	W-291-A	40C
(13)	Resistor (25,000 ohm, 1 watt)	33-325439	.20	(32)	Output Transformer	32-7567	1.00		Baffle	40-5951	...
(14)	Osc. Transformer	32-2043	1.20	(33)	Voice Coil Cone Assy.	36-3029	.60		Dial	27-5193	.15
(15)	Condenser (110 mmf. Mica)	30-1031	.20	(34)	Field Coil Assy.	36-3609	2.50		Knob (Station Selector)	27-4308	.10
(16)	Compensator (Osc. Series) (600 K.C.)	04000 S	.35	(35)	Elec. Condenser (4 mf.)	30-2149	1.95		Knob (Volume, On-Off)	27-4309	.10
(17)	Resistor (25,000 ohm, 1/2 watt)	33-325339	.20	(36)	Resistor (300 ohm)	33-3121	.25		Bottom Shield Assy.	29-3795	.40
(18)	Compensator (I.F. Pri.) (460 K.C.)	Part of (19)	...	(37)	Condenser (.05 mf.)	Part of (19)	...		Bottom Shield Ins.	27-8122	.05
(19)	I.F. Transformer	32-2031	1.50	(38)	Elec. Condenser (8.0 mf.)	Part of (19)	...		Pointer	28-3789	.03
				(39)	Power Transformer (110 V., 60 Cycle)	32-7552	3.25		Pilot Lamp Bracket Assy.	38-7529	.30
				(40)	Condenser (.015 mf. Twin)	3793-DG	.40		A.C. Cord Assy.	L-2183	.40
				(41)	Pilot Lamp (6.3 Volt)	34-2064	.09		Speaker, B6	36-1205	6.00
									Aerial Lead	38-5144	.30

PRICES SUBJECT TO CHANGE WITHOUT NOTICE

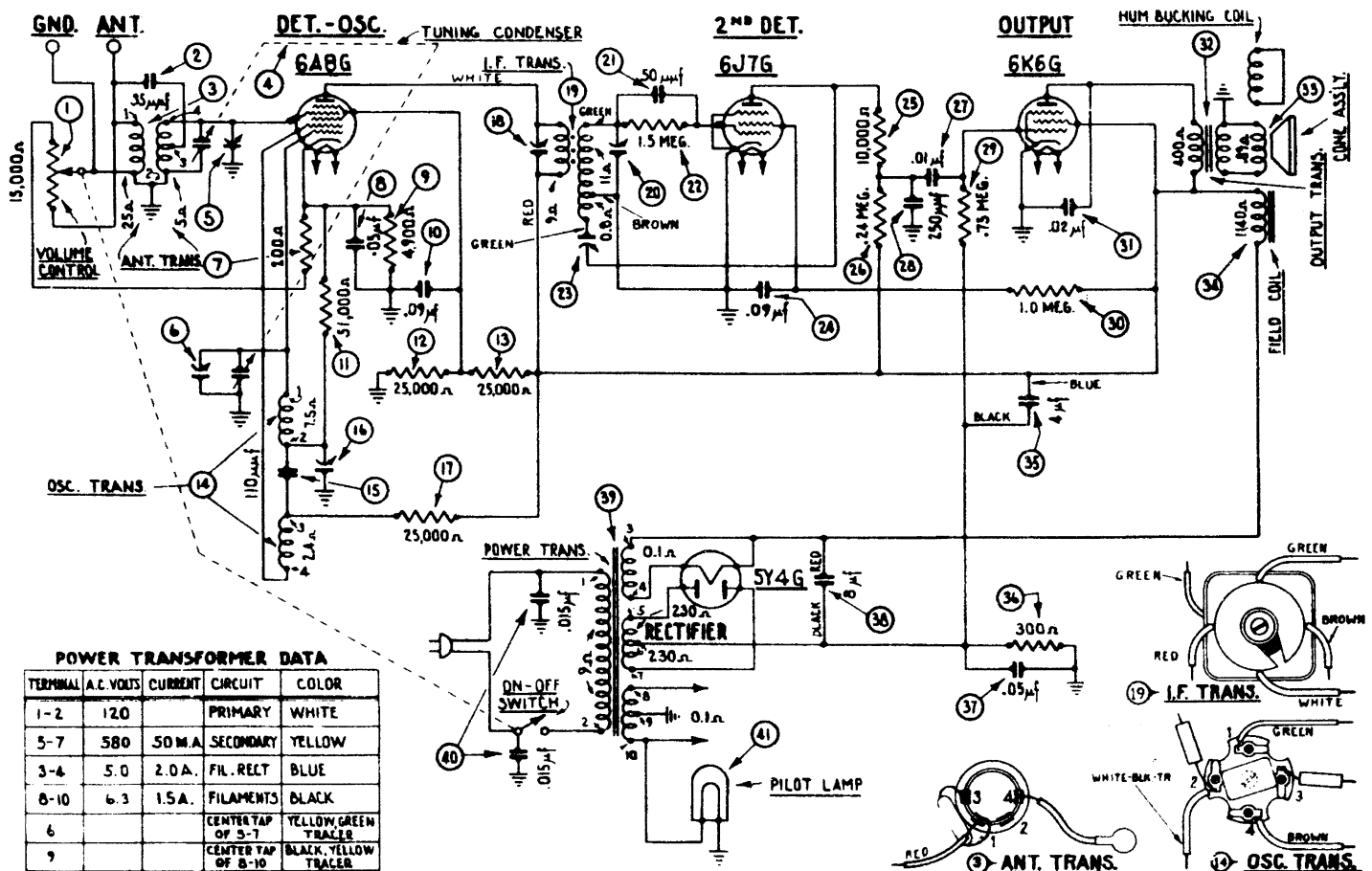


Fig. 4. Schematic Wiring Diagram

PHILCO

Parts and Service Division

Model 37-602

Specifications

TYPE CIRCUIT: Superheterodyne with pentode output.

POWER SUPPLY: 115 V., 25 or 60 cycle, A. C.; D. C.

TUBES USED: 1 type 6A8G, Osc. Det., 1 type 6K7G I.F. Amplifier, 1 type 6Q7G, 2nd Det. 1st audio, 1 type 25A6G output, 1 type 25Z6G rectifier.

FREQUENCY RANGE: 530--1800 K.C.

INTERMEDIATE FREQUENCY: 470 K.C.

CURRENT CONSUMPTION: 55 watts.

SPEAKER: B-4.

POWER OUTPUT: $\frac{3}{4}$ watt.

Adjusting Compensating Condensers

To accurately adjust the compensating condensers in the Model 37-602 receiver, it is necessary to use a signal generator of high stability on all frequencies such as the **PHILCO Model 088 Signal Generator**. This instrument has a continuous frequency range from 110 to 20,000 K.C., and is designed to meet every requirement of the serviceman.

An output meter is also needed,—**PHILCO Model 025 Circuit Tester** includes a very sensitive output meter.

Convenient tools to use in adjusting the compensators are the **PHILCO No. 3164 Fibre Wrench** and **No. 27-7059 Fibre Handled Screw-driver**.

The locations of the various compensating condensers are shown in Fig. 1. Connect the output meter to the plate and cathode contacts of the (25A6G) power tube and adjust it to use the 0-30 volt range.

Intermediate Frequency Circuit

1. Turn the gang condenser to the maximum capacity position (extreme clockwise) and set the Volume Control of the receiver at the maximum position (extreme clockwise).
2. Connect the signal generator output lead through a .1 mfd. condenser to the grid of the 6K7G tube, and the generator ground lead to any point of chassis.
3. Set the signal generator at 470 K.C. and adjust (27) and (29) for maximum reading on the output meter.
4. Remove signal generator output lead and .1 mfd. condenser, from the grid of 6K7G and connect it to the grid of 6A8G. Now adjust condensers (21) and (23) for maximum reading on the output meter.

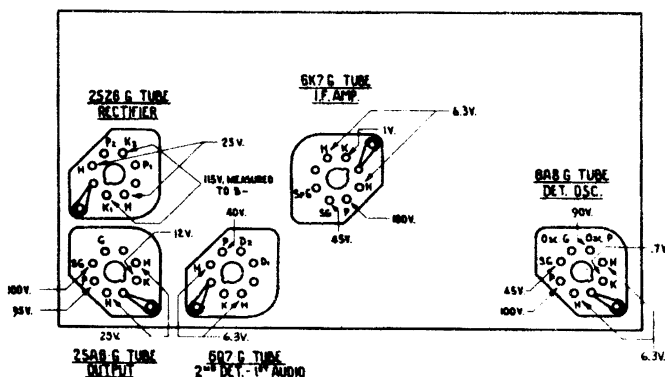


Fig. 2. Tube Sockets as viewed from underside of chassis.
(Voltages measured from socket contacts to B—)

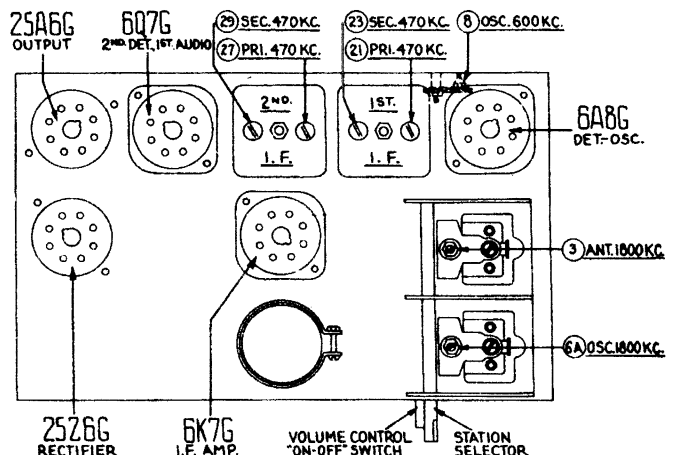


Fig. 1. Location of Compensators

Radio Frequency Circuit

1. Remove the signal generator output lead from the 6A8G tube and connect it to the aerial lead of the receiver through a 100 mmfd. condenser. Turn the gang condenser to the minimum capacity position (extreme counter clockwise) and place a .006" (six thousandth inch) gauge between the stator and rotor plates. Now turn the gang clockwise until stator and rotor plates touch gauge.
2. Remove gauge from gang condenser. Now set signal generator at 900 K.C. (using second harmonic (1800 K.C.) adjust compensators (21) and (23) for maximum reading on the output meter.
3. Turn the signal generator and receiver gang condenser to 600 K.C., and adjust compensator (8). In doing so, the gang condenser must be rolled slightly above and below the 600 K.C. signal until the maximum reading is indicated on the output meter.
4. Turn the gang condenser to 1800 K.C. and signal generator to 900 K.C., (using second harmonic of signal generator 1800 K.C.), readjust compensator (6A) for maximum reading on output meter. Set gang as given in paragraph 1, for this adjustment.
5. Turn the gang condenser and signal generator to 1400 K.C., readjust compensator (3) for maximum reading on output meter. After the above adjustments are completed and receiver is placed in the cabinet, the dial pointer is properly placed by turning the signal generator to 1000 K.C. Then tune receiver for maximum signal. The dial pointer is then placed on gang shaft, so that it indicates 1000 K.C. on dial.

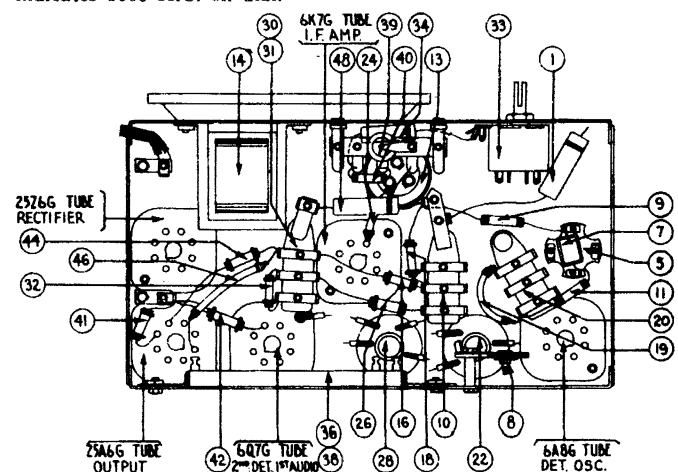


Fig. 3. Base View

Replacement Parts for Model 37-602

Schematic Number	Part and Description	Part No.	Price List	Schematic Number	Part and Description	Part No.	Price List	Schematic Number	Part and Description	Part No.	Price List
①	Condenser (.001 Mf. Tubular)	30-4201	\$.20	③	Condenser (.05 mf.)	Part of ③		⑥	Field Coil Assy.	36-3040	2.40
②	Condenser (35 mmf. Mica)	30-1044	.20	④	Resistor (2.0 meg., ¼ watt)	33-520339	.20	⑦	Volume Control Mtg. Nut	W-684-A	1.25C
③	Compensator (Ant. 1800 KC.)			⑤	Compensator (2nd I.F. Pri.)	Part of ⑤		⑧	B.C. Resistor Mtg. Screw	W-650-A	.40C
④	Ant. Transformer	32-2140	1.40	⑥	2nd I.F. Transformer	32-2006	1.50	⑨	B.C. Resistor Mtg. Nut	W-95-A	.30C
⑤	Osc. Transformer	32-2041	1.20	⑦	Compensator (2nd I.F. Sec.)	Part of ⑦		⑩	Tube Shield Base	28-3898	.03
⑥	Tuning Condenser	31-1794	3.00	⑧	Condenser (.00011 mf. twin)	8035-011U	.25	⑪	Tube Shield Body	28-2726	.10
⑦	Compensator (Osc. 1800 KC.)			⑨	Condenser (.00011 mf.)	Part of ⑨		⑫	Chassis Mtg. Screw	W-1656-A	.75C
⑧	Condenser (35 mmf. Mica)	30-1044	.20	⑩	Resistor (51,000 ohm, ¼ watt)	33-351339	.20	⑬	Chassis Mtg. Nut	W-124-A	.35C
⑨	Compensator (Osc. Series)			⑪	Volume Control (0.5 meg.)	33-5145	1.45	⑭	Chassis Mtg. Washer	W-151-A	.15C
⑩	(600 Kc.)	04000S	.35	⑫	Condenser (.01 mf. Tubular)	30-4145	.20	⑮	Chassis Mtg. Washer	W-291-A	.40C
⑪	Resistor (4900 ohm, ½ watt)	33-249339	.20	⑬	Condenser (.05 mf.)	Part of ⑬		⑯	Speaker Baffle	40-5951	...
⑫	Condenser (.05 Mf. Bakelite)	3615-OSU	.35	⑭	Resistor (133-15 ohm)	33-3235	.55	⑰	Dial	27-5193	...
⑬	Resistor (120,000, ½ watt)	33-412339	.20	⑮	Pilot Lamp	34-2068	.16	⑱	Pointer	28-3789	...
⑭	Condenser			⑯	Resistor (15 ohm)	Part of ⑯		⑲	Shield Bottom Assy.	38-7765	...
⑮	(25-.05-.05-.15-.01 mf.)	30-4410	1.00	⑰	Bias Cell	41-8009	.20	⑳	Shield Bottom Insulator	27-8182	.02
⑯	Elec. Condenser (16-16-10 mf.)	30-2148	3.20	⑱	Resistor (1.0 meg., ¼ watt)	33-510339	.20	㉑	Tube Socket (7-prong)	27-6057	.11
⑰	Filter Choke	32-7544	.95	㉑	Resistor (70,000 ohm, ¼ watt)	33-370339	.20	㉒	Tube Socket (5-prong)	27-6053	.11
⑱	Elec. Condenser (16 mf.)	Part of ⑱		㉒	Resistor (240,000 ohm, ¼ watt)	33-424339	.20	㉓	Knob (Volume, On-Off)	27-4309	.10
㉑	Resistor (51,000 ohm, ¼ watt)	33-351339	.20	㉓	Condenser (.15 mf.)	Part of ㉓		㉔	Knob (Station Selector)	27-4308	.10
㉒	Condenser (.05 mf.)	Part of ㉒		㉔	Resistor (490,000 ohm, ¼ watt)	33-449339	.20	㉕	Elec. Condenser Support	6440	.05
㉓	Resistor (15,000 ohm, ¼ watt)	33-315339	.20	㉕	Condenser (.01 mf.)	Part of ㉕		㉖	Elec. Condenser Insulator	27-7836	.06
㉔	Resistor (300 ohm wirewound)	33-3010	.20	㉖	Resistor (400 ohm wirewound)	33-3122	.25	㉗	Pilot Lamp Bracket Assy.	38-7513	.50
㉕	Condenser (.35 mf. Bakelite)	8318-OSU	.35	㉗	(Flexible)	Part of ㉗		㉘	Ant. Coil Bracket	28-3546	.03
㉖	Compensator (1st I.F. Pri.)	Part of ㉖		㉘	Elec. Condenser (10 mf.)	Part of ㉘		㉙	Bias Cell Assy.	38-7436	.15
㉗	1st I.F. Transformer	32-2005	1.50	㉙	Condenser (.02 mf. Tubular)	30-4113	.20	㉚	Speaker B4	36-1194	6.00
㉘	Compensator (1st I.F. Sec.)	Part of ㉘		㉚	Output Transformer	32-7566	1.10	㉛	A.C. Cord Assem.	1-2183	.40
㉙	Resistor (300 ohm wirewound)	33-3010	.20	㉛	Voice Coil Cone Assy.	36-3029	.60	㉜	Aerial Lead Assem.	38-5144	.30

PRICES SUBJECT TO CHANGE WITHOUT NOTICE

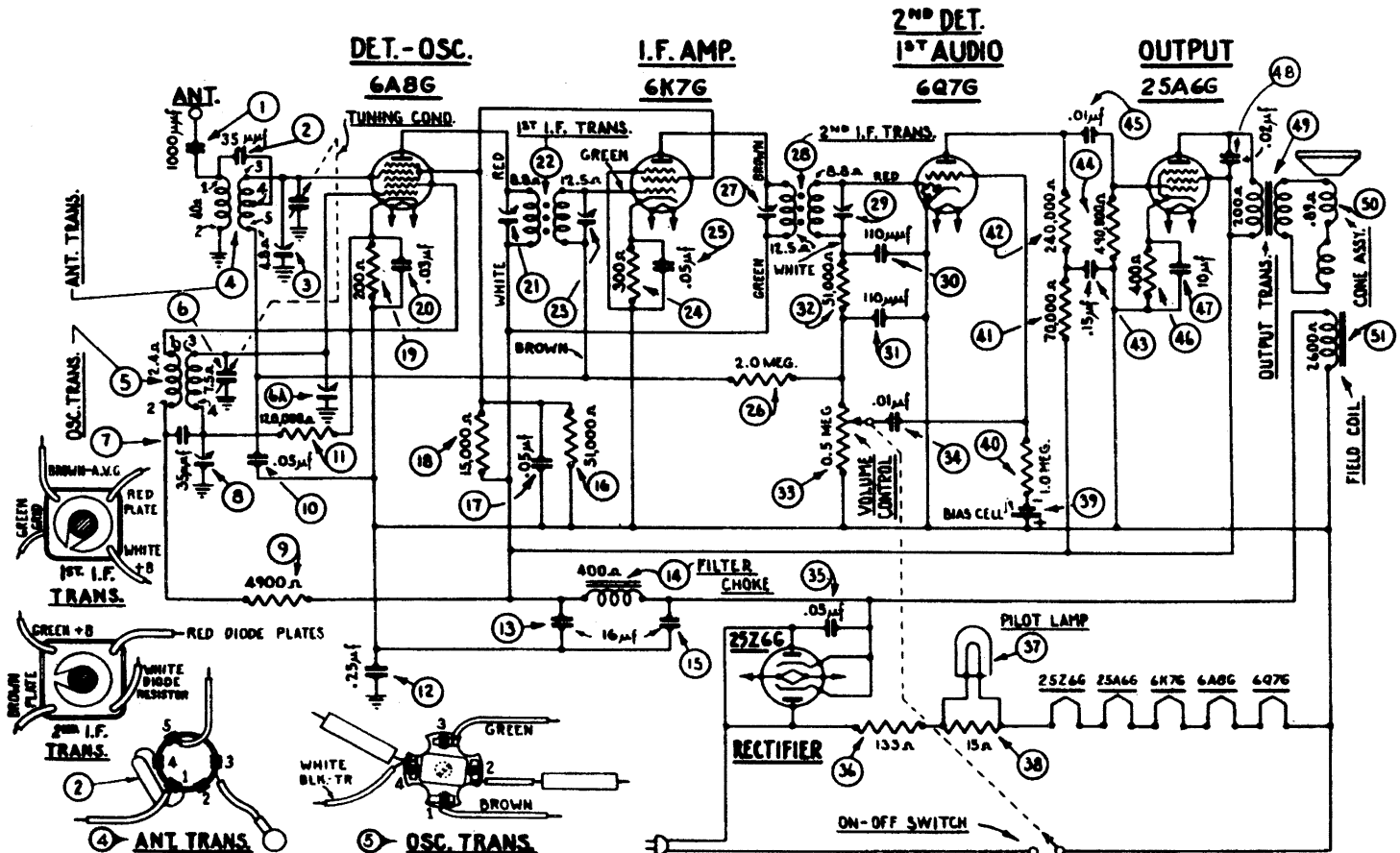


Fig. 4. Schematic Wiring Diagram

PHILCO
Parts and Service Division

PHILCO Model 37-604

General Description

Philco Model 37-604 is a 5 tube superheterodyne receiver using the new Philco High Efficiency self-centering glass tubes and designed for operation on either alternating or direct current. This receiver has two tuning ranges, covering standard broadcast and short wave reception.

The circuit consists of the Philco Foreign Tuning System—controlled by the range switch which provides maximum sensitivity and noise reduction when used with the **New Philco High Efficiency Aerial**. A 6A8G tube is used as the detector-oscillator; 6K7G tube as the I. F. amplifier; 6Q7G tube for the second detector, first audio and automatic volume control; 25A6G tube for Pentode Power Output, and a 25Z6G tube as the Rectifier.

Automatic Bass Compensation is built into the volume control circuit and a Bias cell is used for supplying grid voltage to the first Audio tube.

The Radio Frequency circuit is assembled in one unit and mounted on the left side of the receiver (facing the front). This unit contains the antenna and oscillator coils for each tuning range, range switch, compensating condensers and other parts necessary for the operation of the associated circuits.

Mounted vertically and cushioned on the chassis is the tuning condenser. The bottom section of this condenser is for the oscillator tuning and the top section for the antenna circuit. Attached to the condenser is the pilot lamp housing.

Electrical Specifications

Type of Circuit: Superheterodyne with pentode output.

Power Supply: 115 V., D.C., or A.C., 25 to 60 cycles.

Power Consumption: 50 watts.

Philco Tubes Used: 1 type 6A8G, Detector-Oscillator; 1 type 6K7G, I. F.; 1 type 6Q7G, 2nd Detector, A. V. C., and 1st audio; 1 type 25A6G, Output; and 1 type 25Z6G, Rectifier.

Tuning Ranges: Two. Range 1.— 530 to 1750 K. C.
Range 2.—6.0 to 18.0 M. C.

Intermediate Frequency: 470 K. C.

Speaker: B-5.

Power Output: $\frac{3}{4}$ watt.

Antenna Connections

On the lower front corner of the chassis is a panel containing five terminals. When using the Philco High-Efficiency Aerial terminals 4 and 5 are connected by the metal strap provided on the panel. The red and black leads of the PHILCO High Efficiency Aerial are connected to terminals 1 and 3 respectively and the ground lead to terminal 2.

If a temporary aerial is used shift the strap to rest across terminals 3 and 4 and connect the aerial to terminal 1. A ground connection must not be used when terminals 3 and 4 are connected.

Pilot Lamp Replacement

Facing the front top of the receiver, the pilot lamp housing will be found directly under the dial scale. Two screws will be found on this housing. The right hand screw holds the housing to the tuning condenser and should be removed only when replacing the housing. The center screw holds the pilot lamp socket assembly to the housing. By removing this center screw, the socket assembly may be removed from the housing for replacement of Pilot Lamps.

SOCKET VOLTAGES
Measured from Socket Contact to B—

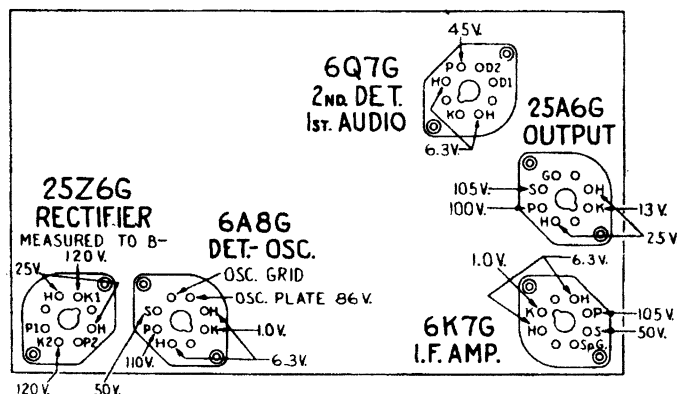


Fig. 1—View of Sockets from Underside of Chassis

The voltages indicated by arrows were measured with a PHILCO 025 CIRCUIT TESTER which contains a voltmeter having a resistance of 1000 ohms per volt. Volume Control at minimum. Range Switch in broadcast position. Line voltage 115 A. C.

Equipment for Adjusting Receiver

The accurate adjustment of the various compensating condensers is vital to the proper functioning of this receiver. There are four compensating condensers in the I. F. Circuit, four in the Oscillator Circuit, and two in the Antenna Circuit. Incorrect adjustment will cause loss of sensitivity, unsatisfactory tone, and poor selectivity.

To accurately adjust this receiver, precision test equipment is necessary. A signal generator such as the **PHILCO MODEL 088 SIGNAL GENERATOR**, covering from 110 to 20,000 K. C. is recommended to adjust the compensators at the various frequencies specified. A visual indication of the receiver output is also necessary to obtain correct adjustment of the compensators. **PHILCO MODEL 025 CIRCUIT TESTER** contains a sensitive output meter and is recommended for these adjustments.

Philco Fibre Wrench No. 3164 and Fibre Handle Screw-driver No. 27-7059 complete the necessary equipment for these adjustments. The locations of the various compensators are shown in Fig. 6.

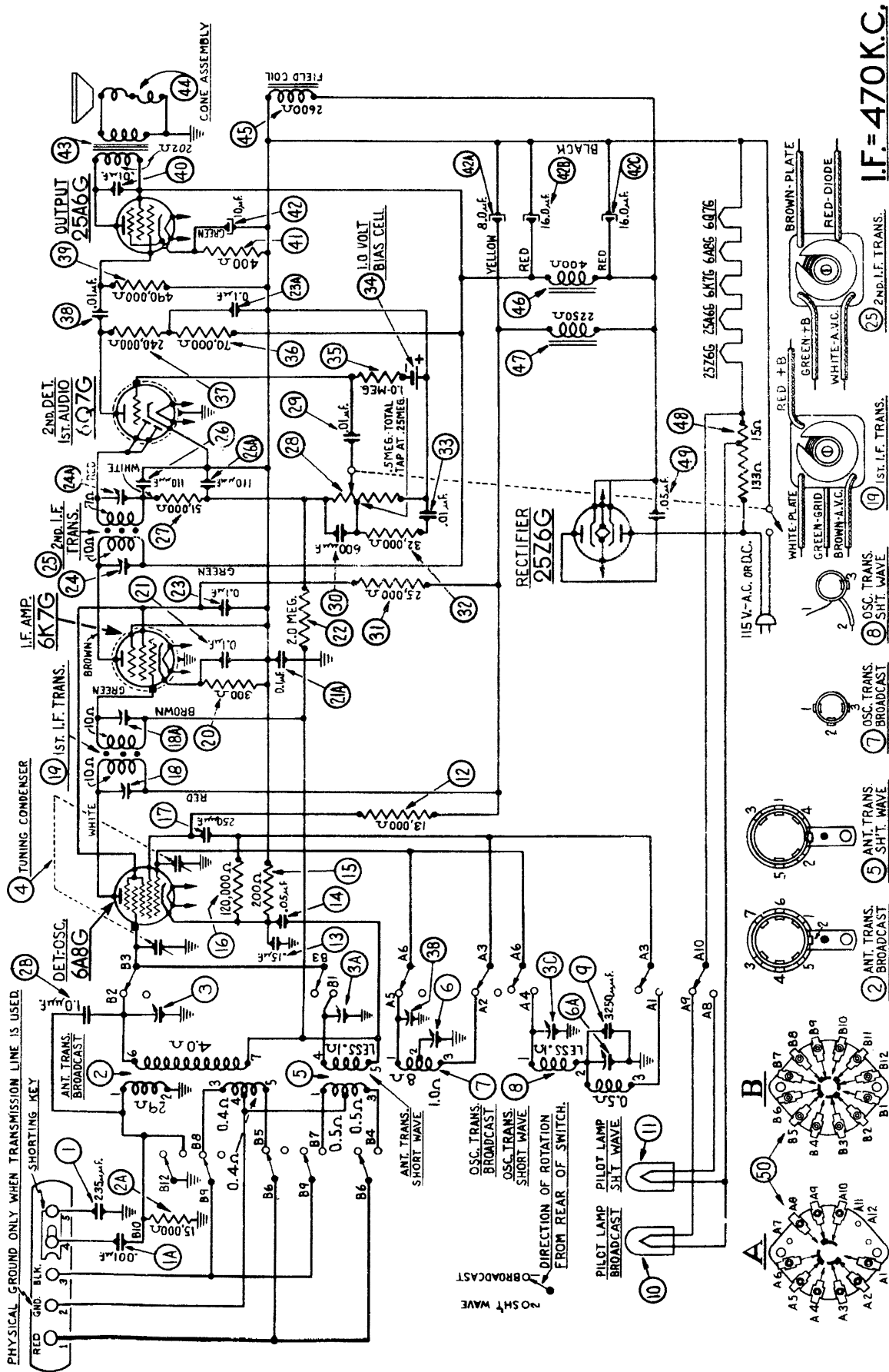


Fig. 2 - Schematic Diagram
Model 37-604

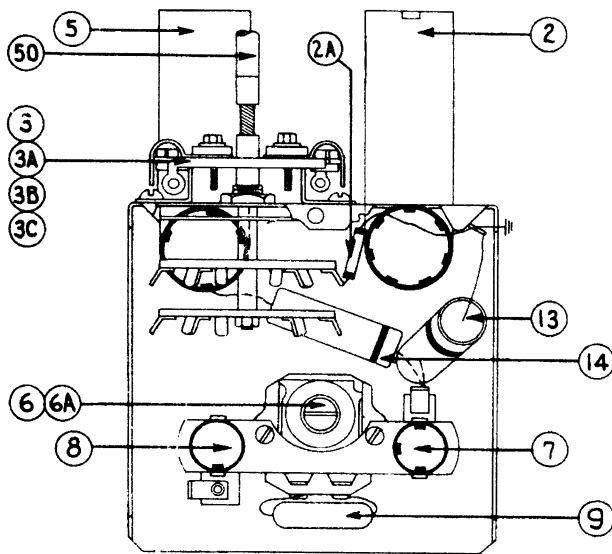


Fig. 3—Rear View of R. F. Unit

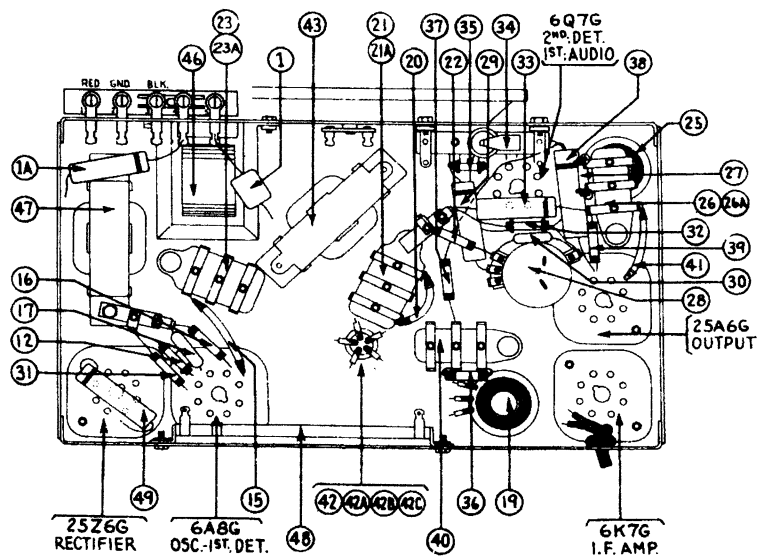


Fig. 4—Base View of Chassis—Underside of Chassis

Replacement Parts—Model 37-604

Schem. No.	Description	Part No.	List Price	Schem. No.	Description	Part No.	List Price
1	Condenser (235 mmfd. mica)	30-1037	\$0.25	45	Field Coil Assembly	36-3620	\$2.75
1a	Condenser (.001 mfd. tubular)	30-4453	.20	46	Filter Choke	32-7572	1.00
2	Antenna Transformer (Broadcast)	32-2141	.90	47	Filter Choke	32-7569	1.30
2a	Resistor (15,000 ohms ½ watt)	33-315339	.20	48	Filament Resistor (15-133 ohms)	33-3235	.55
3	Compensator Ant. (1500 K. C.)	31-6085	.60	49	Condenser (.05 mfd. Tubular)	30-4020	.20
4	Tuning Condenser	31-1796	3.25	50	Range Switch	38-7631	1.50
5	Antenna Transformer (S. W.)	32-2179	.55		Speaker Assembly	36-1204	5.00
6	Compensator (Osc. Series, screw, 600 K. C.)	31-6027	.70		Pilot Lamp Socket Assembly	38-7616	.80
7	Oscillator Transformer (Broadcast)	32-2047	.45		Pilot Lamp Housing Assembly	31-1816	
8	Oscillator Transformer (S. W.)	32-2048	.45		Pilot Lamp	34-2068	.16
9	Condenser (3250 mmfd.)	30-1061	.45		Dial and Hub Assembly	31-1799	.60
10	Pilot Lamp (Broadcast)	34-2068	.16		Socket 8 prong	27-6058	.11
11	Pilot Lamp (S. W.)	34-2068	.16		Socket 7 prong	27-6057	.11
12	Resistor (13000 ohms ½ watt)	33-313339	.20		Tube Shield	28-2726	.10
13	Condenser (.15 mfd. tubular)	30-4191	.20		Tube Shield Base	28-3898	.03
14	Condenser (.05 mfd. tubular)	30-4020	.20		Bias Cell Panel Assembly	38-7436	.15
15	Resistor (200 ohms Wirewound)	33-3010	.20		Terminal Panel Assembly	38-7848	
16	Resistor (120000 ohms ½ watt)	33-412339	.20		Terminal Panel Insulator	27-8360	
17	Condenser (250 mmfd. mica)	30-1032	.25		Mtg. Bracket Tuning Condenser	28-3538	.12
18	Compensator (Pri. & Sec.)	Part of 19			Mtg. Bracket Washer	27-4307	
19	1st I. F. Transformer (470 K. C.)	32-2059	3.00		Mtg. Bracket Washer	3914	.03
20	Resistor (200 ohms wirewound)	33-3010	.20		Mtg. Bracket Sleeve	28-3806	
21	Condenser (.1 mfd. twin bakelite)	4989-ODU	.40		Mtg. Bracket Screw	W-1446A	Per C .40
21a	Condenser (.1 mfd.)	Part of 21			Shaft Centering Plate	28-3805	.08
22	Resistor (2.0 megohms ½ watt)	33-520339	.20		Split Gear Assembly	31-1787	.30
23	Condenser (.1 mfd. Twin Bakelite)	4989-ODU	.40		Gear Tuning Shaft	28-6436	Per C .60
23a	Condenser (.1 mfd. Bakelite)	Part of 23			Retaining Ring	28-8604	.02
24	Compensator (Pri. & Sec.)	Part of 25			Nut, Volume & Range Switch	W-684	Per C 1.25
25	2nd I. F. Transformer (470 K. C.)	32-2049	1.50		Oscillator Coil Mtg. Plate	28-3808	.02
26	Condenser (110 mmfd. Mica Twin Bakelite)	8035-ODU	.25		Spacers	27-8228	.01
26a	Condenser (110 mmfd. Mica Twin Bakelite)	Part of 26			Wire Panel R. F. Unit	38-7178	.02
27	Resistor (51000 ohms ½ watt)	33-351339	.20		Screw Mtg. Coil		
28	Volume Control (AC Switch)	38-7630	1.45		Bottom Shield & Insulator Assembly	38-7908	
29	Condenser (.01 mfd. Tubular)	30-4124	.20		Felt Ring Assembly	36-3605	.10
30	Condenser (110 mmfd. Mica)	30-1049	.20		Baffle & Silk Assembly	40-5918	.20
31	Resistor (25000 ohms ½ watt)	33-325339	.20		Cabinet Top	27-4300	
32	Resistor (32000 ohms ½ watt)	33-332339	.20		Spring	28-8602	
33	Condenser (.01 mfd. Tubular)	30-4124	.20		Cup	28-3842	
34	Bias Cell (1.0 Volt)	41-8009	.20		Washer	27-8255	
35	Resistor (1.0 megohm ½ watt)	33-510339	.20		Felt Washer	27-8258	
36	Resistor (70000 ohms ½ watt)	33-370339	.20		Felt Washer	27-8235	
37	Resistor (240000 ohms ½ watt)	33-424339	.20		Knob Tuning	27-4330	.10
38	Condenser (.01 mfd. Tubular)	30-4169	.20		Knob Vernier	27-4331	.10
39	Resistor (490000 ohms ½ watt)	33-449339	.20		Knob Volume & Range Switch	27-4332	.10
40	Condenser (.01 mfd. Twin Bakelite)	3903-OSU	.25		R. F. Housing Side	28-3770	.15
41	Resistor (400 ohms Wirewound)	33-3122	.25		R. F. Housing Back	28-3814	
42	Condenser (10; 16; 16; and 8 mfd.)	30-2154	3.25		Screw Chassis Mtg.	W-599	Per C .50
43	Output Transformer	32-7568	.95		Washer Chassis Mtg.	W-151	Per C .20
44	Cone & Voice Coil	36-3029	.60				

Figures in black type indicate circled figures in base view.

Prices Subject to Change Without Notice

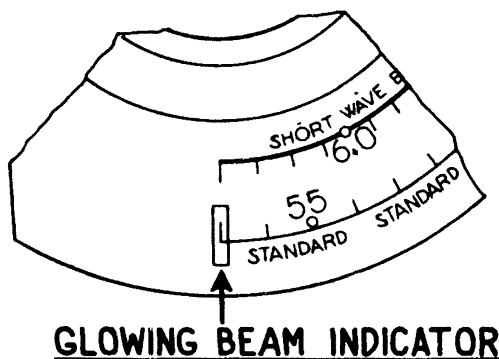


Fig. 5—Dial Calibration

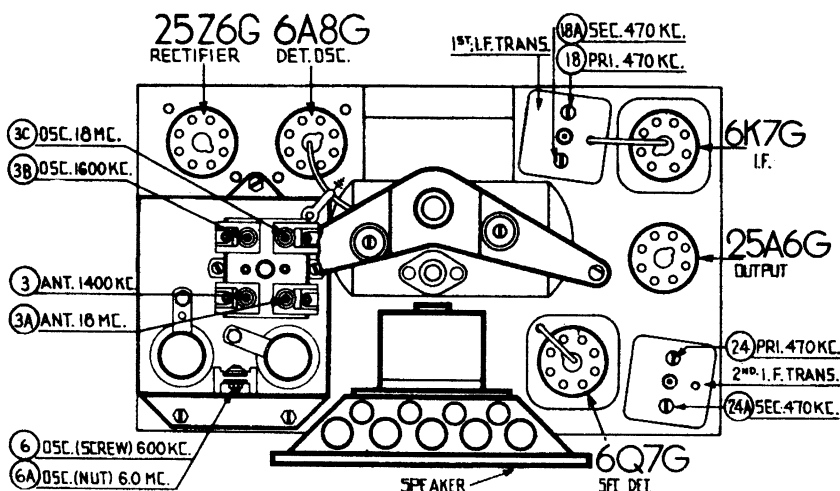


Fig. 6—Location of Compensating Condensers

Adjusting Compensating Condensers

The following procedure must be observed in adjusting the compensators:

DIAL ADJUSTMENT—In order to adjust this receiver correctly, the dial must be aligned to track properly with the tuning condenser. To do this, rotate the tuning condenser control to the extreme counter-clockwise position (maximum capacity). Loosen the set screw of dial hub, then turn dial until the glowing indicator is centered on the first index line of dial scale (see Fig. 5). Now tighten the dial hub set screw in this position.

OUTPUT METER—The 025 Output Meter is connected to the plate and cathode terminals of the 25A6G tube. Adjust the meter to use the (0-30) volt scale. Before adjusting the compensators of each circuit, the signal generator attenuator should be set to give approximately $\frac{1}{4}$ scale reading on output meter.

INTERMEDIATE FREQUENCY CIRCUIT

- 1—Connect the 088 Signal Generator output lead through a .1 mfd condenser to the control grid of the 6K7G tube and the ground connection of the output lead to the chassis.
- 2—The range switch is set in position No. 1 (Broadcast). Rotate the tuning condenser of the receiver to the maximum capacity position (counter-clockwise) and adjust the signal generator for 470 K. C.
- 3—Now adjust compensators @a 2nd I. F. Sec. and @ 2nd I. F. Pri. for maximum output.
- 4—Remove the signal generator output lead and .1 mfd. condenser from the 6K7G tube and connect them to the grid of the 6A8G tube. Now adjust compensators @a 1st I. F. Sec. and @ 1st I. F. Pri. for maximum output.

RADIO FREQUENCY CIRCUIT

Tuning Range—6.0 to 18.0 M. C.

- 1—Remove the signal generator output lead and series condenser from the 6A8G tube and connect them to terminal No. 1 on aerial input panel, and the generator ground lead to terminal No. 3, front of chassis. (a) Terminal 4 and 5 of aerial input panel must be shorted with connector link provided on the panel, during the following adjustments.
- 2—Set range switch in position No. 2 (Shortwave). Turn signal generator and receiver dials to 18 M. C. and adjust compensator @c Osc. for maximum output.
- 3—The adjustment of the antenna compensator on the high frequency range causes a slight detuning of the oscillator circuit. In order to overcome this detuning effect, connect a variable condenser of approximately 350 mmfd, having a good vernier drive, across the oscillator section of the tuning condenser (bottom section). Leaving the signal generator and receiver dials at 18 M. C., tune the added condenser so that the second harmonic of the receiver oscillator will beat against the signal from the signal generator bringing in the signal. The antenna compensator @a should then be adjusted to give maximum output.
- 4—Now remove the external condenser from the tuning condenser of receiver and turn compensator @c Osc. to the maximum capacity position (clockwise). Then without moving signal generator or receiver tuning condenser, turn compensator @c (counter-clockwise) until a second peak is reached on the output meter. The first peak is caused by tuning to the image

frequency signal and must not be used. Compensator @c is adjusted on the second peak to give maximum output. A further check on the image signal may be obtained by turning the signal generator attenuator to maximum output. Then turn dial of receiver to approximately 17.060. If the receiver is aligned correctly and the signal from the generator is strong enough, the image signal will be heard at this point.

- 5—The low frequency compensator @a is now adjusted by turning signal generator and receiver dials to 6 M. C. and adjusting compensator @a Osc. series (see note (a) below) for maximum output. (a) When compensator @a Osc. series is being adjusted, the tuning condenser must be rolled for maximum output. This procedure is accomplished as follows:—First tune compensator @a for maximum output at 6.0 M. C. Then vary the tuning condenser back and forth about the 6.0 M. C. dial mark until maximum output is obtained. Now retune compensator @a, and again vary the tuning condenser back and forth at 6.0 M. C. for maximum output. This operation of first tuning the compensator, then the tuning condenser is continued until the maximum output is obtained at or near the 6.0 M. C. frequency. The maximum output point of this adjustment may fall slightly above or below the 6 M. C. dial setting.
- 6—Compensator @c Osc. and @a Ant. are now retuned as given in paragraphs 3 and 4 above.

Tuning Range—530 to 1750 K. C.

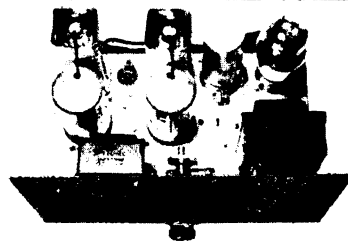
- 1—Set range switch in position No. 1 (Broadcast). Turn the 088 Signal Generator indicator to 800 K. C. and the receiver dial to 1600 K. C. The second harmonic of the 800 K. C. signal, to which the signal generator is tuned, is used for the 1600 K. C. adjustment. Now adjust compensators @b Osc. and @ Ant. for maximum output.
- 2—Turn the signal generator and receiver dials to 600 K. C. and adjust compensator @c Osc. series (screw)—see note (a) below—for maximum reading on the output meter. (a) When compensator @c Osc. series is being adjusted, the tuning condenser must be rolled for maximum output. This procedure is accomplished as follows:—First tune compensator @c for maximum output at 600 K. C. Then vary the tuning condenser back and forth until the maximum output point is reached. Now retune compensator @c and again vary the tuning condenser back and forth at 600 K. C. for maximum output. This operation of first tuning the compensator then the tuning condenser is continued until the maximum output is obtained at, or near, the 600 K. C. frequency. The maximum output point of this adjustment may fall slightly above or below the 600 K. C. dial mark.
- 3—After the low frequency (600 K. C.) end of the range is adjusted, the 1600 K. C. end is readjusted, as given in paragraph (1) above, to correct any variation that the low frequency series compensator may have caused in the alignment of the high frequency end.
- 4—Now turn signal generator and receiver dials to 1400 K. C. and readjust compensator @ Ant. for maximum output.

TO TEST SPEAKERS, USE

PHILCO 055 Vario Frequency Speaker Tester

To properly test a speaker for response over the entire audio range, an audio frequency signal generator is required. Here is such an instrument, supplied in kit form ready to assemble. Will detect any defect in a speaker, thus assuring that no repair job you turn out will be spoiled by a defective speaker.

List Price
\$25.00



PHILCO

Parts and Service Division

Model 37-610 Codes, 121-122 General Description

Model 37-610 is a 5 tube superheterodyne receiver for operation on alternating current, having three tuning ranges, covering standard broadcast and short-wave frequencies and using the New Philco High-Efficiency self-centering glass tubes.

The circuit includes the Philco Foreign Tuning System—controlled by the range switch—providing maximum sensitivity and noise reduction when used with the Philco High Efficiency Aerial, supplied with the receiver.

The red and black leads of the High-Efficiency Aerial "transmission line" are connected to terminals 1 and 2 respectively, of the terminal panel provided at the rear of the chassis. Connect the jumper of the terminal panel across terminal 3 and 4.

If a temporary aerial is used, the jumper should be across terminal 2 and 3. The aerial connects to terminal 1 and the ground to terminal 3.

A good ground connection is desirable in all installations—with the Philco High-Efficiency Aerial, a ground lead and ground clamp are provided. Make the ground connection from the nearest water or radiator pipe to terminal 3 on the terminal panel.

CONSTRUCTION

The chassis is constructed in three basic assembly units.

The Radio Frequency unit contains a 6A8G tube which functions as a Detector-Oscillator, tuning condenser, antenna and oscillator coils for each tuning range, selector switch—compensating condensers for all coils and other parts necessary for the associated circuits. The unit is separately mounted on rubber grommets, cushioning it from the main chassis.

The Intermediate Frequency unit, mounted on the right-hand side of the chassis, facing front, consists of the Intermediate

Frequency coils, compensating condensers, a 6K7G tube for I. F. Amplifier stage, and a 6Q7G tube as the second detector-automatic volume control and first audio stage.

All voltages supplied to the I. F. and R. F. units are furnished from a terminal strip mounted in this unit.

The Power Pack and audio output circuits, together with the required Voltage dividers and filter condensers are mounted in the power unit.

Although unit construction has changed the appearance of this model, the service bulletin will be of great assistance in checking through all stages of the receiver. The Wiring Diagram, as usual, is numbered, indicating all important parts. These numbers correspond with the parts layout shown in Fig. (6). In addition, the range switch wafers are shown on the schematic diagram. The contacts on each wafer are lettered and numbered to indicate their connection points in the schematic diagram, which are also lettered and numbered. The physical drawings of each coil used in the receiver are also shown on schematic diagram Fig. (5). The connections of these coils are numbered on the coil itself and on the schematic diagram.

Fig. 1 shows the Voltage measurements taken from the bottom of the sockets at each contact. In Fig. 2, the correct position of the dial indicator, for proper adjustment of the compensators is shown. Fig. 3, and 4, are the location of the I. F. and R. F. compensators respectively.

The Model 37-610 code 121 receiver is used in cabinets type B and J. In code 122 receiver, Type T cabinet is used. This receiver differs from code 121, only in the rectifier socket mounting and power transformer. The socket is placed adjacent to the 6F6G output tube and power transformer (Part No. 32-7626) is used. Location of rectifier socket is shown in Figs. 1 and 6.

Electrical Specifications

Voltage Rating: 115 Volts. A. C.

Frequency Rating: 50-60 and

For 25 to 40 cycle operation, use Power Transformer marked with asterisk in parts list.

Power Consumption: 60 Watts.

Type and Number of Tubes: 1 type 6A8G, Detector-Oscillator; 1 type 6K7G, I. F.; 1 type 6Q7G; 2nd Detector, A. V. C. and 1st audio; 1 type 6F6G, Output; and 1 type 5Y4G Rectifier.

Undistorted Output: 3 Watts.

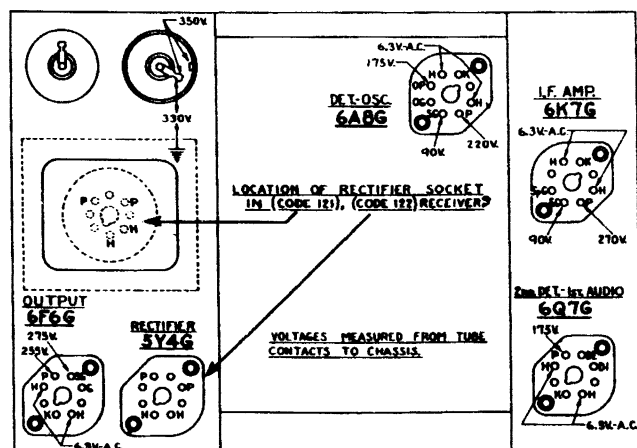
Type Circuit: Superheterodyne with Pentode Output.

Intermediate Frequency: 470 K. C.

Tuning Ranges: 3. Range 1; 530 to 1720 Kilocycles.
Range 2; 2.3 to 7.4 Megacycles.
Range 3; 7.35 to 22 Megacycles.

Speaker Code: 121.—HS.

Speaker Code: 122.—S7.



**Fig 1—Tube Socket Voltages
Viewed from Underside of Chassis**

The Voltages Indicated by Arrows were Measured with a PHILCO 025 CIRCUIT TESTER which contains a 1000 ohm per volt Voltmeter. Range Switch in Broadcast Position. 115 volt line.

POWER TRANSFORMER DATA

Lead No. Shown on Schematic	A C Volts	Currents	Circuit	Color	Resistance
1-2	120	—	Pri.	White	5 ohms
3-4	5.0	2.0A	Fil. Rectifier	Blue	.1 ohms
5-7	670	70 M.A.	High Voltage Sec.	Yellow	145 ohms 155 ohms
6	—	—	Center Tap of 5-7	—	—
8-9	6.7	2.1A	Fil.	Black	.1 ohms

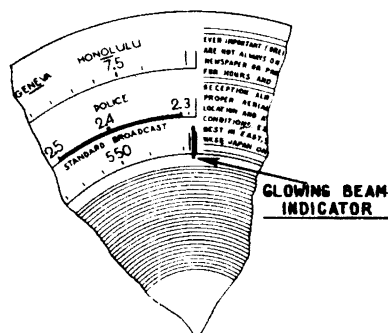


Fig. 2—Dial Calibration

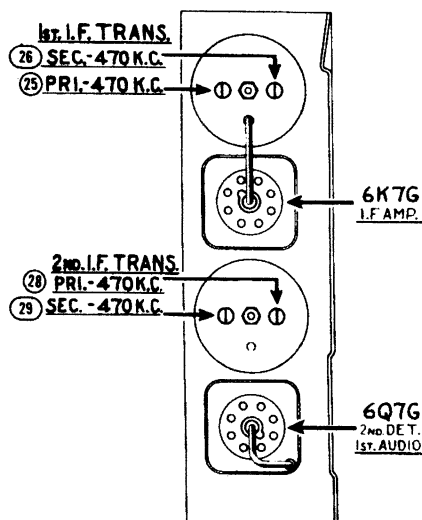


Fig. 3—Locations of I.F. Compensators Top of Chassis

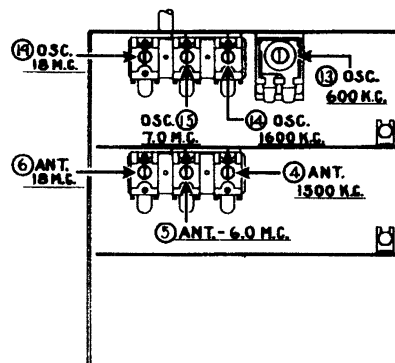


Fig. 4—Locations of R.F. Compensators Underside of Chassis

Alignment of Compensators

The accurate adjustment of the various compensating condensers is vital to the proper functioning of this receiver. There are four compensating condensers in the I. F. Circuit, four in the Oscillator Circuit, and three in the Antenna Circuit. Incorrect adjustment will cause loss of sensitivity, unsatisfactory tone, and poor selectivity.

To accurately adjust this receiver, precision test equipment is necessary. A signal generator such as the PHILCO MODEL 088 SIGNAL GENERATOR, covering from 110 to 20000 K. C. is recommended to adjust the compensators at the various frequencies specified. A visual indication of the receiver output is also necessary to obtain correct adjustment of the compensators. PHILCO MODEL 025 CIRCUIT TESTER contains a sensitive output meter and is recommended for these adjustments.

Philco Fibre Wrench No. 3164 and Fibre Handle Screw-driver No. 27-7059 complete the necessary equipment for these adjustments. The locations of the various compensators are shown in Figs. 3 and 4.

The following procedure must be observed in adjusting the compensators:—

DIAL ADJUSTMENT—In order to adjust this receiver correctly, the dial must be aligned to track properly with the tuning condenser. To do this, rotate the tuning condenser control to the extreme counter-clockwise position (maximum capacity). Loosen the set screw of dial hub, then turn dial until the glowing indicator is centered between the index lines of dial scale (see Fig. 2). Now tighten the dial hub set screw in this position.

OUTPUT METER—The 025 Output Meter is connected to the plate and cathode terminals of the (6F6G) tube. Adjust the meter to use the (0-30) volt scale.

Before adjusting the compensators of each circuit, the signal generator attenuator should be set to give approximately $\frac{1}{4}$ scale reading on output meter.

INTERMEDIATE FREQUENCY CIRCUIT

Frequency 470 K. C.

- 1 Connect the 088 signal generator output lead through a .1 mfd. condenser to the control grid of the 6A8G and the ground connection of output lead to the chassis.
- 2 The tuning range switch is set in position No. 1 (Broadcast). Rotate the tuning condenser of receiver to the maximum capacity position (counter-clockwise), and adjust the signal generator for 470 K. C.
- 3 Adjust compensators 28 2nd I. F. Sec., 28 2nd I. F. Pri., 25 1st I. F. Sec. and 25 1st I. F. Pri. for maximum reading on output meter.

RADIO FREQUENCY CIRCUIT

Tuning Range—7.3 to 22.0 M. C.

- 1 Remove the signal generator output lead from grid of 6A8G tube and connect it through a 0.1 mf. condenser to terminal No. 1 on aerial input panel, rear of chassis. Connect generator ground lead to chassis. Terminals 2 and 3 of aerial input panel must be connected with connector link provided on the panel.

- 2 Set tuning range switch in position No. 3. Turn signal generator and receiver dial to 18.0 M. C. and adjust compensators 10 osc., and 6 ant. for maximum output.

The adjustment of the antenna compensator on the high frequency range causes a slight detuning of the oscillator circuit. In order to overcome this detuning effect, connect a variable condenser of approximately 350 mmf., having a good vernier drive, across the oscillator section of the tuning condenser. Leaving the signal generator and receiver dials at 18.0 M.C., tune the added condenser so that the second harmonic of the receiver oscillator will beat against the signal from the 088 signal generator. The antenna compensator 6 should then be adjusted to give maximum output. Now remove the external condenser and turn compensator 10 to maximum capacity (clockwise) then without moving signal generator or receiver tuning condenser, back off compensator 10 (counter-clockwise) until a second peak is reached on the output meter. Note:—The first peak is caused by tuning to the image signal and must be neglected.

Tuning Range: 2.3 to 7.4 Megacycles.

- 1 Turn range switch to position No. 2 (Police). Rotate signal generator and receiver dials to 7.0 M.C. Then adjust compensator 11 for maximum output. Now turn signal generator and receiver dials to 6.0 M.C. and adjust compensator 5 for maximum reading on output meter.

Tuning Range: 530 to 1720 Kilocycles.

- 1 Set range switch in position No. 1 (standard broadcast). The 088 signal indicator is set at 800 K. C. and the receiver dial at 1600 K. C.
 - (a) In adjusting the receiver at 1600 K. C., the second harmonic of 800 K. C., to which the signal generator is tuned, is used. Now adjust compensator 13 osc., 4 ant. for maximum output.
- 2 The low frequency end of the band is now tuned by turning signal generator and receiver dials to 600 K. C. and adjust compensator 12 for maximum output. When compensator 12 osc. series is being adjusted, the tuning condenser must be rolled for maximum output. This is accomplished as follows: First tune compensator 13 for maximum output. Then vary the tuning condenser for maximum output about 600 K. C. Now retune compensator 12, and again vary the tuning condenser back and forth at 600 K. C. for maximum output. This operation of first tuning the compensator, then the tuning condenser is continued until maximum output is obtained at the 600 K. C. frequency.
- 3 After the low frequency (600 K. C.) end of range 1 is adjusted, the 1600 K. C. end is re-adjusted, as given in Paragraph 1 above, to correct any variation that the low frequency series compensator may have caused in the alignment of the high frequency end.
- 4 Now turn signal generator and receiver dial to 1500 K. C. and re-adjust compensator 11 for maximum output.

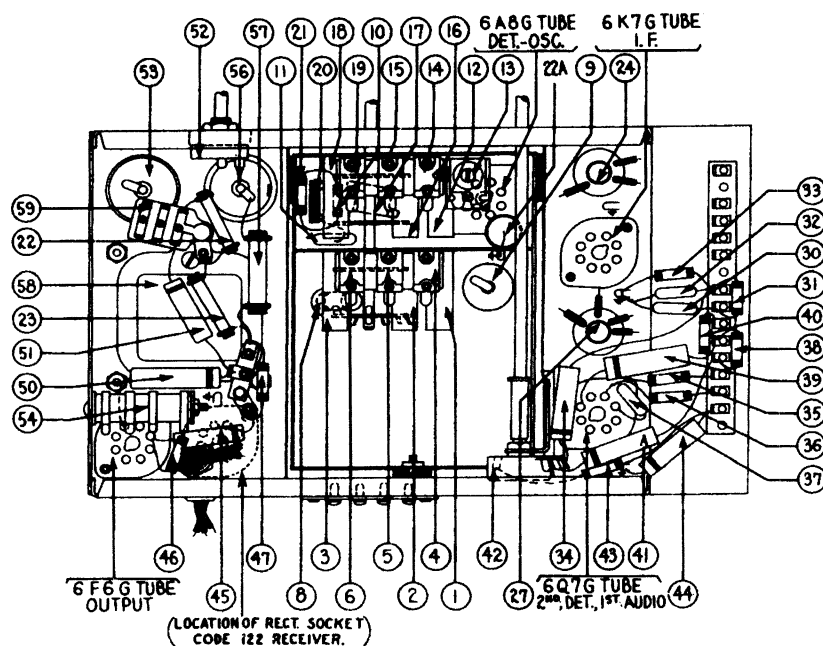


Fig. 6—Base View of Chassis

Replacement Parts—Model 37-610

Schem. No.	Description	Part No.	Price List	Schem. No.	Description	Part No.	Price List
①	Antenna Transformer (Broadcast)	32-2108	\$0.80	⑤⑨	Power Transformer 50-60 cycle 115 volts	32-7583	\$4.25
②	Antenna Transformer (Police)	32-2119	.65	⑥⑩	Power Transformer 25-40 cycle 115 volts	32-7584	
③	Antenna Transformer (Short-Wave)	32-2109	.75	⑥⑪	Power Transformer 50-60 cycle 115 volts Code 122	32-7585	
④	Compensator (Broadcast)	31-6092	.60	⑥⑫	Power Transformer 25-40 cycle 115 volts Code 122	32-7587	
⑤	Compensator Ant. (Police)	Part of ④		⑥⑬	Condenser (Twin Bakelite, .015-.015 mfd.)	3793 DG	.40
⑥	Compensator Ant. (Short-Wave)	Part of ④		⑥⑭	Pilot Lamp	34-2030	.15
⑦	Tuning Condenser	31-1821	3.50	⑥⑮	Wave Switch Antenna Section	42-1170	1.10
⑧	Condenser (.05 mfd. Tubular)	30-4020	.20	⑥⑯	Wave Switch Osc. Section	42-1172	1.10
⑨	Electrolytic Condenser 16 mfd.	30-2118	1.65	⑥⑰	I. F. Wiring Panel	38-7703	.25
⑩	Resistor (10000 ohm ½ watt)	33-310339	.20	⑥⑱	I. F. Wiring Panel Spacer	28-4001	Per C .25
⑪	Condenser (250 mmfd. Mica)	30-1032	.25	⑥⑲	Ant. Panel	38-7714	
⑫	Oscillator Transformer (Broadcast)	32-2120	.65	⑥⑳	Tube Socket 7 prong	27-6057	.11
⑬	Compensator Osc. Series 600 K.C.	31-6055	.55	⑥㉑	Tube Socket 8 prong	27-6058	.11
⑭	Compensator Osc. 1600 K.C.	31-6092	.60	⑥㉒	Tube Socket Rectifier, Code 122	27-6063	.11
⑮	Compensator Osc. 7.0 Meg.	Part of ⑬		⑥㉓	Tube Shield	28-2726	.10
⑯	Oscillator Transformer (Police)	32-2121	.40	⑥㉔	I. F. Transformer Shield	38-7763	.20
⑰	Condenser (Semi-fixed 1650 mfd.)	31-6096	.40	⑥㉕	AC Cable	L-2183	.40
⑱	Oscillator Transformer (S.W.)	32-2110	.75	⑥㉖	Speaker Cable	L-3181	.25
⑲	Compensator (Osc. 18.0 megacycles)	Part of ⑱		⑥㉗	Grommet Mtg. Tuning Condenser	27-4325	.02
⑳	Condenser (Semi-fixed 3500 mfd.)	31-6097	.50	⑥㉘	Grommet Mtg. R. F. Unit	27-4317	.04
㉑	Resistor (32000 ½ watt)	33-332339	.20	⑥㉙	Mtg. Sleeve R. F. Unit	28-2287 FA-3	.01
㉒	Resistor (61000 ½ watt)	33-331339	.20	⑥㉚	Mtg. Screw R. F. Unit	W-729 FA-3	Per C .41
㉓A	Condenser (.1 mfd. Tubular)	30-4120	.25	⑥㉛	Mtg. Washer R. F. Unit	28-3927	.05
㉔	Resistor (20000 ohm, ½ watt)	33-320439	.20	⑥㉜	Pilot Lamp Assembly	38-7706	.35
㉕	1st I. F. Transformer	32-2100	1.50	⑥㉝	Bracket Electrolytic Condenser	6440	.05
㉖	Compensator 1st I. F. Transformer	Part of ㉕		⑥㉞	Bracket Screw Electrolytic Condenser	W-1446 FA-3	Per C .40
㉗	Compensator 1st I. F. Transformer	Part of ㉕		⑥㉟	Bracket Nut Electrolytic Condenser	W-95 FA-3	Per C .30
㉘	2nd I. F. Transformer	32-2102	1.50	⑥㊱	Chassis Mtg. Screw	W-1358A	Per C 2.60
㉙	Compensator 2nd I. F. Transformer	Part of ㉘		⑥㊲	Wave Switch Indexing Plate & Shaft	42-1173 Rev-E	.50
㉚	Compensator 2nd I. F. Transformer	Part of ㉘		⑥㊳	Dial	27-5203	.50
㉛	Condenser (110 mmfd. Mica)	30-1031	.20	⑥㊴	Dial Hub	28-7187 FA-3	.12
㉜	Resistor (51000 ohm, ½ watt)	33-351339	.20	⑥㊵	Dial Set Screw	W-1641	.02
㉝	Condenser (110 mmfd. Mica)	30-1031	.20	⑥㊶	Dial Clamp	28-2837 FA-3	.10
㉞	Resistor (490000 ohm ½ watt)	33-449339	.20	⑥㊷	Dial Screen Assembly	38-7912	.10
㉟	Condenser (.01 mfd. Tubular)	30-4124	.25	⑥㊸	Dial Gear	28-7185	.10
㊱	Resistor (1 megohm ½ watt)	33-510339	.20	⑥㊹	Drive Gear	31-1884	.25
㊲	Resistor (1 megohm ½ watt)	33-510339	.20	⑥㊺	Scale Guard	27-8324	.02
㊳	Condenser (110 mfd. Mica)	30-1031	.20	⑥㊻	Dial Gear Thrust Spring	28-8611	.01
㊴	Resistor (1 megohm ½ watt)	33-510339	.20	⑥㊼	Dial Gear C. Washer	28-3904	.01
㊵	Condenser (0.1 mfd. Tubular)	30-4122	.20	⑥㊽	Dial Gear Thrust Washer	28-3976	.30
㊶	Resistor (490000 ohms, ½ watt)	33-449339	.20	⑥㊾	Mask	27-4198	.30
㊷	Condenser (.015 mfd. Tubular)	30-4358	.20	⑥㊿	Mask Washer	27-8318	Per C .50
㊸	Volume Control	33-510339	1.00	⑦①	Mask Arm and Link Assembly	3799 866	.35
㊹	Resistor (51000, ½ watt)	33-510339	.20	⑦②	Mask Guide	38-7844	
㊺	Condenser (.008 mfd. Tubular)	30-4112	.20	⑦③	Spring	28-8624	Per C .50
㊻	Condenser (.015 mfd. Tubular)	30-4226	.20	⑦④	Lens	27-8310	.02
㊼	Resistor (1 megohm ½ watt)	33-510339	.20	⑦⑤	Knob Tuning Control	27-4330	.10
㊽	Resistor (70000 ohm ½ watt)	33-370339	.20	⑦⑥	Knob Vernier	27-4331	.10
㊾	Output Transformer	32-7019	.85	⑦⑦	Knob—Tone & Volume	27-4332	.10
㊿	Voice Coil and Cone	36-3157	.80	⑦⑧	Knob—Wave Switch	27-4326	.10
①	Condenser (.03 mfd. Tubular)	30-4380	.20	⑦⑨	Volume Control Shaft	28-6499	.10
②	Condenser (.008 mfd. Tubular)	30-4112	.20	⑦⑩	Volume Control Spring	28-4117	Per C .40
③	Tone Control and AC Switch	42-1182	.75	⑦⑪	Retaining Clip	28-8610	.03
④	Electrolytic Condenser (8 mfd.)	30-2024	1.10	⑦⑫	Washer	28-4186	Per C .75
⑤	Resistor C-Bias	33-3277	.20	⑦⑬	Washer	4436	Per C 1.50
⑥	Field Coil Assembly	36-3039	2.75	⑦⑭	Nut Tone Volume Controls	W-684 FA-3	Per C 1.25
⑦	Electrolytic Condenser (12 mfd.)	30-2117	1.20	⑦⑮	Speaker S7	36-1009	
⑧	Resistor (9000 ohm 2 watt)	33-290339	.30	⑦⑯	Speaker HS	36-1220	

*Code 122,

**Code 122, 25 cycle operation.

PHILCO
Parts and Service Division

PHILCO Model 37-611

Electrical Specifications

Type Circuit: Superheterodyne, for alternating or direct current; Pentode Output and Built-in Connection for the PHILCO High-Efficiency Aerial.
Power Supply: 115 volts, alternating or direct current.
Power Consumption: 55 watts.
Philco Tubes Used: 6A8G, 6K7G, 6Q7G, 25A6G, 25Z6G.
Frequency Ranges:—Range 1—530 to 1720 K.C.; Range 2—2.3 to 7.4 M.C.; Range 3—7.35 to 22 M.C.
Intermediate Frequency: 470 K.C.
Speakers: S-15—"B", "F", "T" Cabinets. HS-2—"J" Cabinet.

Alignment of Compensators

To accurately adjust this receiver, precision test equipment is necessary. A signal generator such as the Philco Model 088 Signal Generator, covering from 110 to 20,000 K.C. is recommended to adjust the compensators at the various frequencies specified. A visual indication of the receiver output is also necessary to obtain correct adjustment of the compensators. Philco Model 025 Circuit Tester contains a sensitive output meter and is recommended for these adjustments. Philco Fibre Handle Screw-driver No. 27-7059 and Tuning Condenser Part No. 45-2325 complete the necessary equipment for these adjustments. The locations of the various compensators are shown in Figs. 2 and 3.

The following procedure must be observed in adjusting the compensators:—

DIAL ADJUSTMENT—In order to adjust this receiver correctly, the dial must be aligned to track properly with the tuning condenser. To do this, rotate the tuning condenser control to the extreme counter-clockwise position (maximum capacity). Loosen the set screw of dial hub, then turn dial until the glowing indicator is centered between the index lines of dial scale. Now tighten the dial hub set screw in this position.

OUTPUT METER—The 025 Output Meter is connected to the plate and cathode terminals of the (25A6G) tube. Adjust the meter to use the (0-30) volt scale.

INTERMEDIATE FREQUENCY CIRCUIT

Frequency 470 K. C.

1. Connect the 088 Signal Generator output lead through a .1 mfd. condenser to the control grid of the 6A8G, and the ground connection of output lead to the chassis.
2. The tuning range switch is set in position No. 1 (Broadcast). Rotate the tuning condenser of the receiver to the maximum capacity position (counter-clockwise), and adjust the signal generator for 470 K. C.
3. Adjust compensators (23S) 2nd I. F. Sec., (23P) 2nd I. F. Pri., (20S) 1st I. F. Sec. and (20P) 1st I. F. Pri. for maximum reading on the output meter.

RADIO FREQUENCY CIRCUIT

Tuning Range—7.3 to 22.0 M. C.

1. Remove the signal generator output lead from the grid of the 6A8G tube and connect it with the .1 mfd. condenser to terminal No. 1 on the aerial input panel and the generator ground lead to terminal No. 3, rear of chassis. Terminals 2 and 3 must be connected by the shorting link provided on the panel.
2. Set the range switch in position 3. Turn the receiver and signal generator dials to 18 M. C. Now adjust compensator (9B) by turning the screw (clockwise) to the maximum capacity position, then slowly turning it (counter-clockwise) until a second peak signal is reached on the output meter. The first peak from maximum capacity is the image signal and must not be used. If the above procedure is correctly performed, the image signal will be found at 17.06 M. C., by advancing signal generator attenuator and turning receiver dial to this frequency mark on the scale.
3. The antenna compensator (5B) is now adjusted by connecting a variable condenser of approximately 350 mmfd., Philco Part No. 45-2325, across the oscillator section of the gang condenser and ground. Leaving the signal generator and receiver dials at 18 M. C. tune the added

Fig. 2—I. F. Compensators

Fig. 3—R. F. Compensators

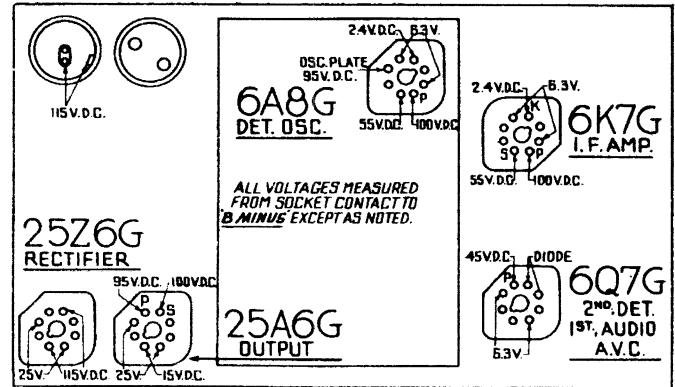


Fig. 1—Socket Voltages—Underside of Chassis View

The voltages indicated by arrows were measured with a Philco 025 Circuit Tester which contains a voltmeter having a resistance of 1000 ohms per volt. Volume Control at minimum, range switch in broadcast position, line voltage 115 A. C.

condenser from the maximum capacity point until the second harmonic of the receiver oscillator beats against the signal from the generator thereby bringing in the signal. The antenna compensator (5B) is then adjusted for maximum output. Now remove the external condenser and readjust compensator (9B) as given in paragraph 2 above.

Tuning Range: 2.3 to 7.4 Megacycles.

1. Turn the range switch to position No. 2 (Police). Rotate the signal generator and receiver dials to 7.0 M. C. Then adjust compensator (9A) for maximum output. Now turn the signal generator and receiver dials to 6.0 M. C. and adjust compensator (5A) for maximum reading on output meter.

Tuning Range: 530 to 1720 Kilocycles.

1. Set the range switch in position No. 1 (Broadcast). Rotate the signal generator and receiver dials to 1600 K. C. Now adjust compensators (8) Osc. and (5) Ant. for maximum output.
2. Rotate the signal generator and receiver dials to 580 K. C. Compensator (10) Osc. series is now adjusted for maximum output as follows:
 First tune compensator (10) for maximum output, then vary the tuning condenser of the receiver for maximum output about the 580 K. C. dial mark. Now turn the compensator (10) slightly to the right or left and vary the receiver tuning condenser for maximum output. If the output reading increases, turn compensator (10) in the same direction a trifle more, and again vary the tuning condenser for maximum output. If the output decreases, set the compensator in the opposite direction. This procedure of first setting the compensator and then varying the tuning condenser is continued until there is no further gain in output reading.
3. Readjust compensator (8) for maximum output, by turning signal generator and receiver dials to 1600 K. C.
4. Turn the signal generator and receiver dials to 1500 K. C. and adjust compensator (5) Ant. for maximum output.

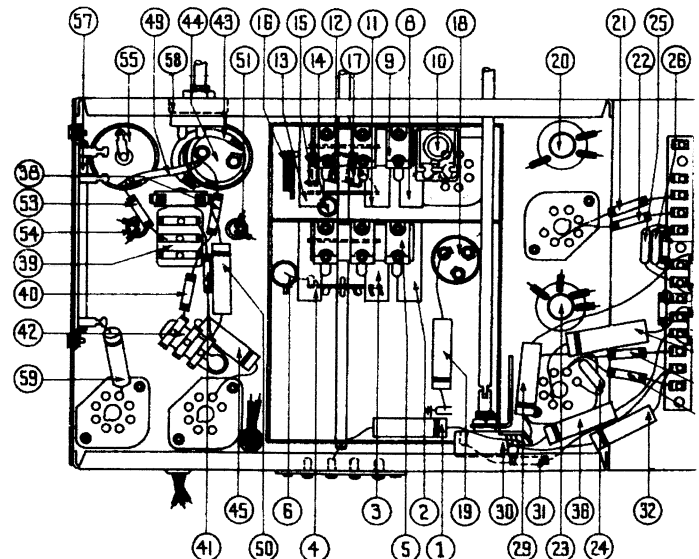


Fig. 4—View of Parts from Underside of Chassis

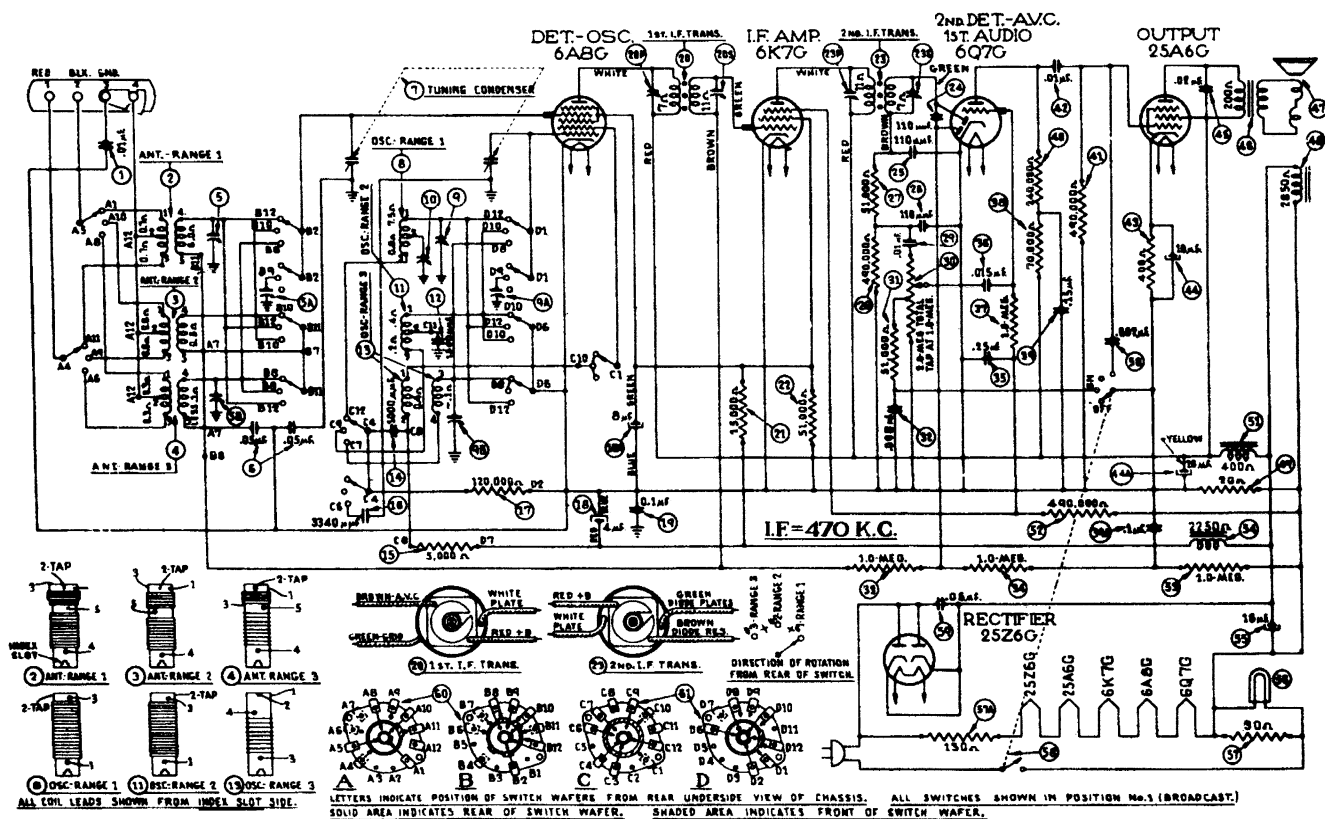


Fig. 5—Schematic Diagram

Replacement Parts—Model 37-611

Schem. No.	Description	Part No.	List Price	Schem. No.	Description	Part No.	List Price	Schem. No.	Description	Part No.	List Price
1	Condenser .01 mfd. tubular	30-4145	\$0.20	44	Electrolytic Condenser (10-20 mfd.)	30-2166			Shield Base	28-3898	\$0.03
2	Antenna Transformer (Range 1)	32-2108		45	Condenser (.02 mfd. tubular)	30-4113	\$0.20		Mtg. Grommet R. F. Unit	27-4317	.04
3	Antenna Transformer (Range 2)	32-2119	.65	46	Output Transformer HS-2, 8-15	32-7395	1.10		Mtg. Sleeve R. F. Unit	28-2257	.01
4	Antenna Transformer (Range 3)	32-2109	.75	47	Cone Voice Coil HS-2	36-3027	1.00		Mtg. Screw R. F. Unit	W-729	.45 C
5	Compensator (3 sections)	31-6092	.60		Cone Voice Coil HS-15	36-3157	2.80		Mtg. Washer R. F. Unit	28-3927	.01
6	Condenser (.05 mfd. dual tubular)	30-4394	.35	48	Field Coil HS-2	36-3519	2.80		Mtg. Washer Felt R. F. Unit	27-7807	.50 C
7	Tuning Condenser	31-1821	3.50	49	Field Coil HS-15	36-3519	2.80		Mtg. Rubber Tuning Condenser	27-4325	.02
8	Oscillator Transformer (Range 1)	32-2120	.65	50	Resistor (20 ohms Flexible)	33-3043	.25		Mtg. Transformer Plate	28-3808	.02
9	Compensator (3 sections Osc.)	31-6092	.60	51	Condenser (.002 mfd. tubular)	30-4177	.25		Spacer	27-8228	.01
10	Compensator (Osc. series 580 K.C.)	31-6096	.55	52	Choke	32-7668	1.20		Screw	W-1635	.30 C
11	Oscillator Transformer (Range 2)	32-2121	.40	53	Resistor (490000 ohms 1/2 watt)	32-449339	.20		Rubber Washer	5189	.03
12	Condenser (1650 mmfd.)	31-6096	.40	54	Resistor (1.0 megohm 1/2 watt)	33-510339	.20		Rubber Bushing	27-4360	.04
13	Oscillator Transformer (Range 3)	32-2110	.75	54	Choke	32-7667	1.60		Chassis Mtg. Screw	W-1495	1.50 C
14	Condenser (1000 mmfd. tubular)	30-4463	.20	56	Electrolytic Condenser (16 mfd.)	30-2124	.75		Washer	28-2069	.50 C
15	Resistor (5000 ohms 1/2 watt)	33-260339	.20	57	Pilot Lamp	33-3292	.60		Knob Tuning Control	27-4330	.10
16	Condenser (3500 mmfd.)	31-6097	.50	57	Resistor (30-130 ohms wirewound)	42-1224	.75		Knob Vernier	27-4331	.10
17	Resistor (120000 ohms 1/2 watt)	33-412339	.20	58	Tone Control & Power Switch	30-4020	.20		Knob Tone Volume	27-4332	.10
18	Electrolytic Condenser (4-8 mfd.)	30-2157	.20	59	Condenser (.05 mfd. tubular)	42-1200	1.20		Knob Range Switch	27-4326	.10
19	Condenser (.01 mfd. tubular)	30-4122	.20	60	Range Switch (Ant.)	42-1200	1.20		Bottom Shield Plate	28-4234	
20	1st I. F. Transformer Assembly	32-2100	1.50	61	Range Switch (Osc.)	42-1246	1.20		Snap Fasteners	28-4279	.75 C
21	Resistor (15000 ohms 1/2 watt)	33-515339	.20		Pilot Lamp Assembly	38-7910	.50		Bottom Shield Plate T Cabinet	28-4358	
22	Resistor (51000 ohms 1/2 watt)	33-515359	.20		Switch Index Plate & Shaft	42-1173	.50		Base Plate & Frame	40-4939	.75
23	2nd I. F. Transformer Assembly	32-2102	1.50		Dial	27-5203	.50		Gasket	27-8311	.01
24	Condenser (110 mmfd. mica)	30-1031	.20		Hub	28-7187	.12		Screw	W-1644	.50 C
25	Condenser (110 mmfd. mica)	30-1031	.20		Clamp	28-2837	.10		Glass	27-8298	.05
26	Condenser (110 mmfd. mica)	30-1031	.20		Set Screw	W-1641	.02		A. C. Cable	L-2183	.40
27	Resistor (51000 ohms 1/2 watt)	33-515339	.20		Dial Gear	31-1884	.25		Speaker Cable	L-2218	
28	Resistor (490000 ohms 1/2 watt)	33-449339	.20		Drive Gear & Hub Assembly	28-7185	.25		Speaker S-15 ("B", "T", "F" Cabinet)	36-1173	5.75
29	Condenser (.01 mfd. tubular)	30-4124	.25		Thrust Spring	28-8611	.01		Speaker HS-2 ("J" cabinet)	36-1255	
30	Volume Control	33-5158	1.00		Thrust Washer	28-3976	.30 C				
31	Resistor (51000 ohms 1/2 watt)	33-515339	.20		C Washer	28-3904	.01		"B" CABINET		
32	Condenser (.008 mfd. tubular)	30-4112	.20		Mask	27-5198	.30		Baffle Silk Assembly	40-5968	.30
33	Resistor (1.0 megohm 1/2 watt)	33-510339	.20		Mask Arm & Link Assembly	31-1866	.35				
34	Resistor (1.0 megohm 1/2 watt)	33-510339	.20		Mask Guide & Pilot Lamp Bracket	38-7844	.15		"F" CABINET		
35	Condenser (.25 mfd. tubular)	30-4446	.25		Mask Washer	27-8318	.50 C		Baffle Silk Assembly	40-5833	.75
36	Condenser (.015 mfd. tubular)	30-4358	.20		Ind. Bracket & Lens Assembly	38-7912	.30		"J" CABINET		
37	Resistor (1.0 megohms 1/2 watt)	33-510339	.20		Scale Guard	27-8324	.02		Baffle Silk Assembly	40-5971	.80
38	Resistor (70000 ohms 1/2 watt)	33-370339	.20		Volume Control Shaft	38-8059	.40 C		"T" CABINET		
39	Condenser (.15 mfd. dual bakelite)	4989-DU	.40		Shaft Spring	28-4117	.40		Baffle Silk Assembly	40-5969	.30
40	Resistor (240000 ohms 1/2 watt)	33-424339	.20		Retaining Clip	28-4394	.01				
41	Resistor (490000 ohms 1/2 watt)	33-449339	.20		Tube Socket (7 Prong)	27-6057	.11				
42	Condenser (.01 mfd. bakelite)	3903-SU	.25		Tube Socket (8 Prong)	27-6058	.11				
43	Resistor (400 ohms wirewound)	33-5122	.25		Tube Shield	28-2726	.10				

Figures in black type indicate circled figures in Base View.

Prices Subject to Change without Notice

PHILCO PARTS & SERVICE DIVISION
Philadelphia, Pa.

PHILCO Model 37-620

General Description

Model 37-620 is a 6 tube superheterodyne receiver for operation on alternating current, having three tuning ranges, covering standard broadcast and short-wave frequencies, and using the new Philco High-Efficiency self-centering glass tubes.

The circuit includes the Philco "Foreign Tuning System"—controlled by the tuning range switch—which provides maximum sensitivity and noise reduction, when used with the **Philco High Efficiency Aerial** supplied with the receiver. One stage of Radio Frequency amplification which greatly increases the signal-to-noise ratio, automatic bass compensation in the volume control circuit, and a separate diode circuit for automatic volume control are also incorporated in this receiver.

The red and black leads of the High-Efficiency Aerial "transmission line" are connected to terminals 1 and 2 respectively, of the terminal panel provided at the rear of the chassis. Connect the jumper on the terminal panel across terminals 3 and 4.

If a temporary aerial is used, the jumper should be across terminals 2 and 3. The aerial connects to terminal 1 and the ground to terminal 3.

A good ground connection is desirable in all installations. Make the ground connection from the nearest water or radiator pipe to terminal 3 on the terminal panel.

CONSTRUCTION

The chassis is constructed in three basic assembly units, concentrating each circuit in a single unit.

(1) The Radio Frequency unit, located in the center of the chassis, contains a 6K7G tube which functions as a Radio Frequency Amplifier; a 6A8G tube, for the Detector-Oscillator circuit; individual Antenna, R. F. Amplifier and Oscillator coils for each tuning range; selector switch; compensating condensers for

all coils; and other parts necessary for the associated circuits. The unit is separately mounted on rubber grommets, cushioning it from the main chassis.

(2) The Intermediate Frequency unit, mounted on the right hand side of the chassis (facing front of set) consists of the Intermediate Frequency transformers, compensating condensers, a 6K7G tube for the I. F. Amplifier stage, and a 6Q7G tube as the second detector—automatic volume control and first audio stage. All voltages supplied to the I. F. and R. F. units are furnished from a terminal strip mounted on this unit.

(3) The Power Pack and Audio Output circuits, together with the required voltage dividers and filter condensers are mounted in the power unit. This unit contains a 6F6G tube and a 5Y4G tube for the Power output and rectifier circuits respectively; and the combined tone control and power switch. The socket for the 5Y4G tube is mounted on the power transformer.

Schematic Diagram Fig. 5 is numbered, indicating all important parts. These numbers correspond with the parts layout shown in Fig. 6. In addition, the range switch wafers are shown on the schematic diagram. The contacts on each wafer are lettered and numbered to indicate their connection points in the schematic diagram, which are also lettered and numbered. The physical drawings of each coil used in the receiver are also shown on schematic diagram Fig. 5. The connections of these coils are numbered on the coil Drawing and on the schematic diagram.

Fig. 1 shows the Voltage measurements taken from the bottom of the sockets at each contact. In Fig. 2, the correct position of the dial indicator, for proper adjustment of the compensator condenser is shown. Fig. 3 and 4 are the locations of the I. F. and R. F. compensators respectively.

This receiver is used in cabinets type B and J. These instructions, however, will cover both types.

Electrical Specifications

Voltage Rating: 115 Volts AC.

Frequency Rating: 50 to 60 cycles.

For 25 to 40 cycle operation, the Power Transformer marked with asterisk in the parts list is used.

Power Consumption: 65 Watts

Types and Number of Tubes: 2 type 6K7G, R. F. and I. F. Amplifiers; 1 type 6A8G, Detector-Oscillator; 1 type 6Q7G,

2nd Detector, Automatic Volume Control and 1st Audio; 1 type 6F6G, Output; and 1 type 5Y4G Rectifier.

Undistorted Output: 3 watts.

Intermediate Frequency: 470 K. C.

Tuning Ranges: Three, Range 1.—530 to 1720 Kilocycles; Range 2.—2.3 to 7.4 Megacycles; Range 3.—7.35 to 22 Megacycles.

Speakers: B Cabinet—S-7.

J Cabinet—HS.

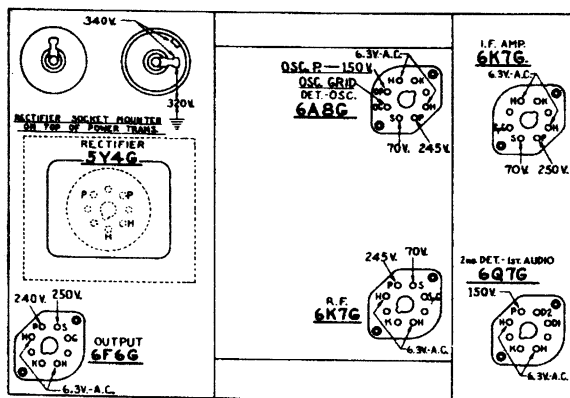


Fig. 1—Socket Voltages
Measured from Socket Contact to Ground
Underside of Chassis View

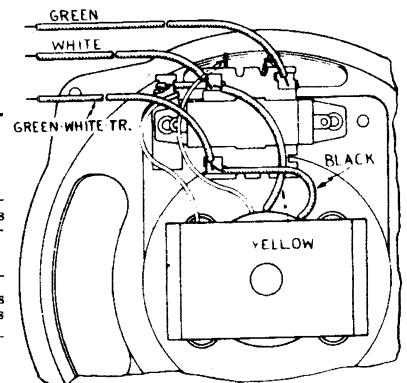
The voltages indicated by arrows were measured with a Philco 925 Circuit Tester which contains a voltmeter having a resistance of 1000 ohms per volt. Volume Control at minimum. Range Switch in broadcast position. Line voltage 115 A. C.

POWER TRANSFORMER DATA

Lead No. Shown on Schematic	A.C. Volts	Current	Circuit	Color	Resistance
1-2	120	—	Pri.	White	5 ohms
3-4	5.0	2.0 A.	Flt. Rectifier	Blue	.1 ohm
5-7	670	70 Ma.	High Voltage Sec.	Yellow	145 ohms 155 ohms
6	—	—	Center Tap of 5-7	—	—
8-9	6.7	2.1 A.	Flt.	Black	.1 ohm

Run 2.

While the circuit arrangement remains the same, the position of the parts is slightly changed in this Run. Bakelite condenser ⑥ Part No. 3793-DG is removed from front and placed in the rear of the chassis. Tubular condenser ⑦ Part No. 30-4380 is replaced with a Part No. 8318-SU bakelite condenser, placed in the position formerly held by 3793-DG.



Speaker Wiring

When replacing any part of the speaker, the hum bucking coil connections should be connected for minimum hum.

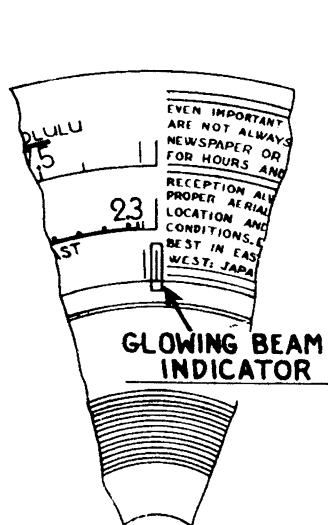


Fig. 2--Dial Calibration

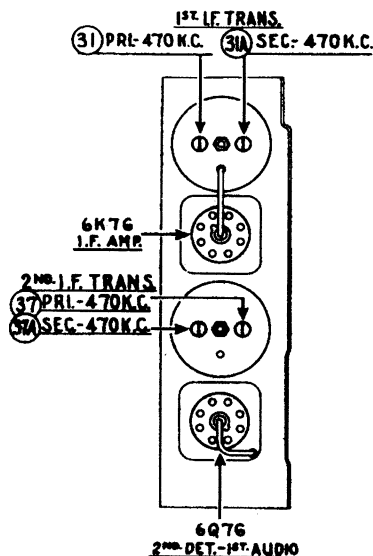


Fig. 3--Locations of I. F. Compensators

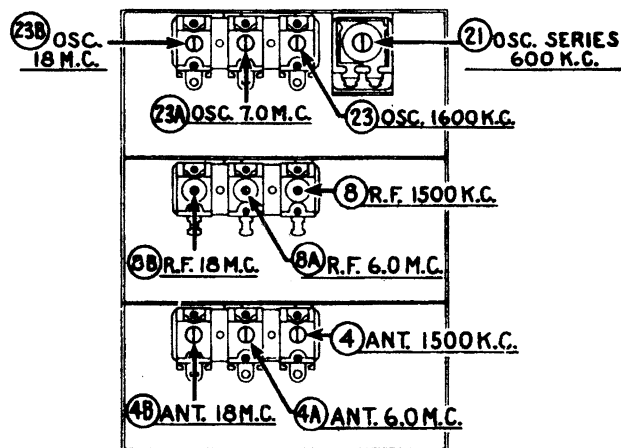


Fig. 3--Locations of R. F. Compensators

Adjustment of Compensators

The accurate adjustment of the various compensating condensers is vital to the proper functioning of this receiver. There are four compensating condensers in the I. F. Circuit, four in the Oscillator Circuit, three in the R. F. Amplifier Circuit and three in the Antenna Circuit. Incorrect adjustment will cause loss of sensitivity, unsatisfactory tone, and poor selectivity.

To accurately adjust this receiver, precision test equipment is necessary. A signal generator such as the PHILCO MODEL 088 SIGNAL GENERATOR, covering from 110 to 20,000 K. C. is recommended for adjusting the compensators at the various frequencies specified. A visual indication of the receiver output is also necessary to obtain correct adjustment of the compensators. PHILCO MODEL 025 CIRCUIT TESTER contains a sensitive output meter and is recommended for these adjustments.

Philco Fibre Handle Screw-driver No. 27-7059 completes the necessary equipment for these adjustments. The locations of the various compensators are shown in Figs. 3 and 4.

The following procedure must be observed in adjusting the compensators:—

DIAL CALIBRATION—In order to adjust this receiver correctly, the dial must be aligned to track properly with the tuning condenser. To do this, rotate the tuning condenser control to the extreme counter-clockwise position (maximum capacity). Loosen the screw of dial hub, then turn dial until the glowing indicator is centered on the first index line of dial scale (see Fig. 2). Now tighten the dial hub set screw in this position.

OUTPUT METER—The 025 Output Meter is connected to the plate and cathode terminals of the (6F6G) tube. Adjust the meter to use the (0-30) Volt Scale.

During the I. F. and R. F. adjustments, the signal generator output should be maintained at the lowest possible level that will give indication on the output meter.

INTERMEDIATE FREQUENCY CIRCUIT

Frequency 470 K. C.

- 1 Connect the 088 Signal Generator output lead, through a .1 mfd. condenser, to the control grid of the 6A8G tube; and the ground connection of the output lead to the chassis.
- 2 Set the range switch in position No. 1 (Broadcast), then rotate the tuning condenser of the receiver to the maximum capacity position (counter-clockwise), and adjust the signal generator for 470 K. C.
- 3 Adjust compensators ②a 2nd I. F. Sec., ② 2nd I. F. Pri., ③a 1st I. F. Sec., and ③ 1st I. F. Pri. for maximum reading on output meter.

RADIO FREQUENCY CIRCUIT

Tuning Range—7.3 to 22.0 M. C.

- 1 Remove the signal generator output lead from the grid of 6A8G tube, and connect it through a .1 mfd. condenser to terminal No. 1 on aerial input panel, and the generator ground lead to terminal No. 3, rear of chassis.
 - (a) Terminals 2 and 3 of aerial input panel must be connected with connector link provided on the panel, during these adjustments.
- 2 Set the tuning range switch in position No. 3 (Short Wave). Turn the signal generator and receiver dials to 18. M. C. and

adjust compensators ②b Osc., ⑧b R. F. and ④b Ant. for maximum output. (See Note (a) below).

- (a) The adjustment of the Radio Frequency compensator on the high frequency range causes a slight detuning of the oscillator circuit. In order to overcome this detuning effect, connect a variable condenser of approximately 350 mmfd., having a good vernier drive, across the oscillator section of the tuning condenser. Leaving the signal generator and receiver dials at 18 M. C., tune the added condenser so that the second harmonic of the receiver oscillator will beat against the signal from the 088 signal generator bringing in the signal. The antenna and R. F. compensator ①b and ⑧b should then be adjusted to give maximum output. Now remove the external condenser and turn compensator ②b to maximum capacity (clockwise) then, without moving signal generator or receiver tuning condenser, back off compensator ②b (counter-clockwise) until a second peak is reached on the output meter. The first peak is caused by tuning to the image frequency signal and must not be used.

Tuning Range 2.3 to 7.4 M. C.

- 1 Turn the range switch to position No. 2 (police). Rotate the signal generator and receiver dials to 7.0 M. C. Then adjust compensator ②a for maximum output. Now turn the signal generator and receiver dials to 6.0 M. C. and adjust compensators ③a R. F. and ④a Ant. for maximum reading on the output meter.

Tuning Range 530 to 1720 K. C.

- 1 Set the range switch in position No. 1 (Broadcast). Set the 088 Signal Generator indicator at 800 K. C. and the receiver dial at 1600 K. C.
 - (a) In adjusting the receiver at 1600 K. C. the second harmonic of 800 K. C., to which the signal generator is tuned, is used. The second harmonic of 800 K. C. is 1600 K. C. Now adjust compensators ② Osc., ⑧ R. F. and ④ Ant. for maximum reading on output meter.
- 2 The low frequency end of the range is now tuned by turning the signal generator and receiver dials to 600 K. C. and adjusting compensator ② Osc. Series—(see Note (a) below)—for maximum reading on output meter.
 - (a) While compensator ② is being adjusted, the tuning condenser must be rolled for maximum output. This is accomplished as follows:—First tune compensator ② for maximum output. Then vary the tuning condenser for maximum output at 600 K. C. Now retune compensator ②, and again vary the tuning condenser back and forth at 600 K. C. for maximum output. This operation of first turning the compensator then the tuning condenser is continued until maximum output is obtained at the 600 K. C. frequency.
- 3 After the low frequency (600 K. C.) end of the range is adjusted, the 1600 K. C. end is readjusted, as given in Paragraph (1) above, to correct any variation that the low frequency series compensator may have caused in the alignment of the high frequency end.
- 4 Now turn the signal generator and receiver dials to 1500 K. C. and readjust compensators ④ ant., and ⑧ R. F., for maximum output.

Use . . .

PHILCO MODEL 025 CIRCUIT TESTER

The Most Compact
Self-Contained Complete
Radio Circuit and Value
Testing Instrument

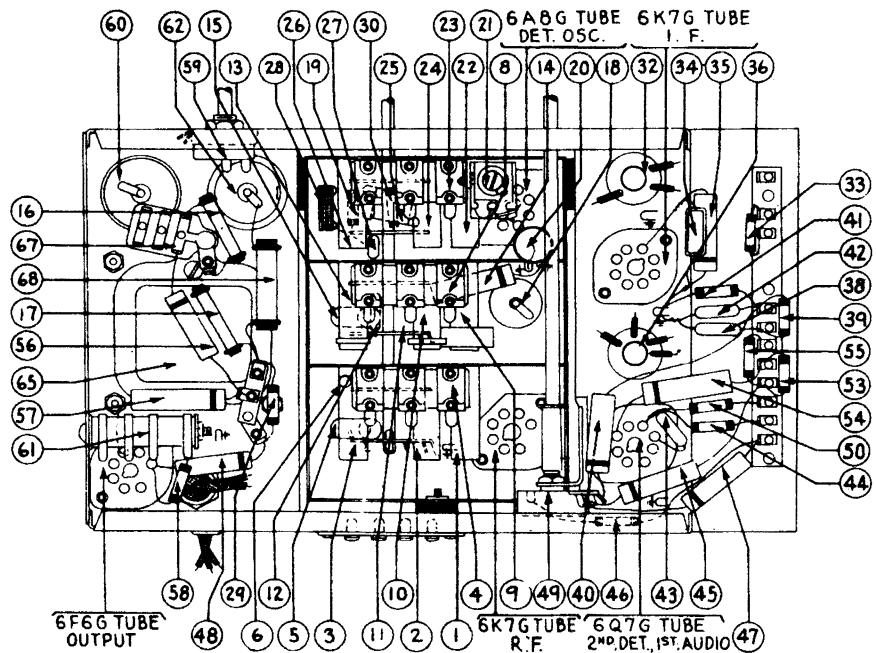


Fig. 6—Base View

Replacement Parts—Model 37-620

Schem. No.	Description	Part No.	Price List	Schem. No.	Description	Part No.	Price List
1	Antenna Transformer (Broadcast)	32-2108	\$0.80	64	Resistor (9000 ohms, 2 watt)	33-290539	\$0.30
2	Antenna Transformer (Police)	32-2119	.65	65	Power Transformer (115 Volt 50-60 cycle)	32-7583	4.50
3	Antenna Transformer (S. W.)	32-2109	.75	66	Power Transformer (115V; 25-40 cycle)	38-7584	
4	Compensator Ant. 1500 K.C.	31-6092	.60	67	Pilot Lamp	34-2039	.15
5	Condenser (.05 mfd. Tubular)	30-4020	.20	68	Condenser (.015-.015 mfd. Double Bakelite)	3793 DG	.40
6	Resistor (51000 ohms 1/2 watt)	33-351339	.20	69	Wave Switch Antenna	42-1170	1.10
7	Tuning Condenser	31-1818	4.50	70	Wave Switch R. F.	42-1171	1.00
8	Compensator (R. F. 1500 K.C.)	31-6092	.60		Wave Switch Osc.	42-1172	1.10
9	R. F. Transformer (Broadcast)	32-2105	.75		Wave Switch Indexing Plate & Shaft	42-1173	.50
10	R. F. Transformer (Police)	32-2106	.65		Pilot Lamp Assembly	38-7706	.35
11	Condenser (1.0 mmfd.)				Dial	27-5203	.50
12	Condenser (14 mmfd. Mica)	30-1073	.20		Dial Hub	28-7187	.12
13	R. F. Transformer (S. W.)	32-2126	.65		Dial Clamp	28-2837	.10
14	Condenser (.05 mfd. Tubular)	30-4123	.20		Dial Hub Set Screw	W-1641	.02
15	Condenser (.05 mfd. Tubular)	30-4020	.20		Dial Gear	28-7185	.10
16	Resistor (51000 ohms 1 watt)	33-351439	.20		Dial Guard	27-8324	.02
17	Resistor (20000 ohms 1 watt)	33-320439	.20		Thrust Spring	28-8611	.01
18	Electrolytic Condenser (18 mfd.)	30-2118	1.65		Thrust Washer	28-3976	Per C .30
19	Resistor (10000 ohms 1/2 watt)	33-310339	.20		"O" Washer	28-3904	.01
20	Condenser (.1 mfd. Tubular)	30-4170	.25		Vernier Drive	31-1884	.28
21	Compensator (Osc. Series 600 K.C.)	31-6056	.55		Mask	31-1871	.75
22	Osc. Transformer (Broadcast)	32-2120	.65		Mask Arm Assembly	27-5198	.30
23	Compensator (Osc. 1600 K.C.)	31-6092	.60		Mask Guide on Lamp Bracket Support	31-1866	.35
24	Osc. Transformer (Police)	32-2121	.40		Mask Washer	28-7844	.15
25	Condenser (1650 mmfd. Semi-fixed)	31-6096	.40		Dial Screen Assem.	27-8318	Per C .50
26	Osc. Transformer (S.W.)	32-2110	.75		Spring	38-7912	Per C .30
27	Condenser (250 mmfd. Mica)	30-1032	.25		Lens	28-8624	Per C .50
28	Condenser (3500 mmfd. Semi-fixed)	31-6097	.50		Volume Control Shaft	27-8310	.02
29	Resistor (70000 ohms 1/2 watt)	33-370839	.20		Volume Control Shaft Spring	28-6499	.10
30	Resistor (32000 ohms 1/2 watt)	33-32339	.20		Retaining Clips	28-4117	Per C .40
31	Compensator (1st I. F. Pri. 470 K.C.)	Part of 39			Washer	28-8610	.03
32	1st I. F. Transformer	32-2100	1.50		Washer	28-4186	Per C .75
33	Resistor (1000 ohms 1/2 watt)	33-310339	.20		Socket 8 prong	27-6058	.11
34	Resistor (400 ohm Bakelite)	33-1211	.20		Socket 7 prong	27-6057	.11
35	Condenser (.05 mfd. Tubular)	30-4020	.20		Tube Shield	28-2726	.10
36	2nd I. F. Transformer	32-2102	1.50		Tube Shield Base	28-3898	.03
37	Compensator (2nd I. F. Pri. 470 K.C.)	Part of 42			I. F. Shield	38-7763	.20
38	Condenser (110 mmfd. Mica)	30-1031	.20		Terminal Panel I. F. Unit	38-7703	.25
39	Resistor (51000 ohms 1/2 watt)	33-351339	.20		Washer I. F. Unit	28-4001	Per C .25
40	Condenser (.01 mfd. Tubular)	30-4124	.25		Wiring Panel	38-6306	.03
41	Resistor (490000 ohms 1/2 watt)	33-449339	.20		Wiring Panel Power Unit	38-5864	.02
42	Condenser (110 mmfd. Mica)	30-1031	.20		Grommet Mtg. Tuning Condenser	27-4325	.02
43	Condenser (110 mmfd. Mica)	30-1031	.20		Grommet R. F. Unit	27-4317	.04
44	Resistor (1 megohm 1/2 watt)	33-510339	.20		Sleeve Mtg. R. F. Unit	28-2257	.01
45	Condenser (.015 mfd. Tubular)	30-4358	.20		Spacer Mtg. R. F. Unit	27-8339	Per C .40
46	Resistor (51000 ohms 1/2 watt)	33-351339	.20		Screw Mtg. R. F. Unit	W-729	Per C .45
47	Condenser (.006 mfd. Tubular)	30-4112	.20		Washer Mtg. R. F. Unit	28-3927	.01
48	Condenser (.015 mfd. Tubular)	30-4226	.20		Insulator, Mtg. Elect. Cond.	27-7194	.01
49	Volume Control	33-5158	1.00		Bracket Mtg. Elect. Cond.	6440	.05
50	Resistor (1 megohm 1/2 watt)	33-510339	.20		Antenna Panel	38-7714	.15
51	Voice Coil and Cone, S7 Speaker	36-3014	.80		Speaker Cable	L-2181	.25
52	Voice Coil and Cone, HS Speaker	36-3627			A. C. Cord	L-2183	.40
53	Output Transformer, S7 & HS Speaker	32-7019	.85		Speaker S7—B. Cabinet	36-1009	5.75
54	Resistor (1 megohm 1/2 watt)	33-510339	.20		Speaker HS—J. Cabinet	36-1220	6.25
55	Condenser (.01 mfd. Tubular)	30-4122	.20		Knobs Tuning	27-4330	.10
56	Resistor (490000 ohms 1/2 watt)	33-449339	.20		Knobs Tuning Vernier	27-4331	.10
57	Condenser (.008 mfd. Tubular)	30-4112	.20		Knobs Wave Switch	27-4326	.10
58	Condenser (.03 mfd. Tubular)	30-4380	.20		Knobs Tone & Volume	27-4332	.10
59	Resistor (1 megohm 1/2 watt)	33-510339	.20		Bezel Frame & Plate Assembly	40-5939	.75
60	Tone Control and A. C. Switch	42-1182	.75		Gasket	27-8311	.01
61	Electrolytic Condenser (8 mfd.)	30-2024	1.10		Glass	27-8298	.05
62	Bias Resistor	33-3277	.20		Ring	28-3967	.35
63	Electrolytic Condenser (12 mfd.)	30-2117	1.20		Screw Bezel Mtg.	W-1644	Per C .50
64	Field Coil Assembly, S7 Speaker	36-3039	2.75		Nut Mtg. Volume & Tone Control	W-684	Per C 1.25
65	Field Coil Assem. HS Speaker	36-3690			Chassis Mtg. Screw	W-1358A	Per C 2.60
					Chassis Mtg. Washer	28-2089	Per C .30

* 25-40 cycle operation.

Figures in black type indicate circled figures in Base View.

PHILCO Model 37-623

Electrical Specifications

Type of Circuit: Superheterodyne; battery operated; with class "B" output, the Philco Automatic Aerial Tuning System and built in connections for the Philco High Efficiency Aerial.

Batteries Required: "A"—Philco 172-R two volt storage battery or a dry "A" battery Philco Part No. 41-8011. If a dry "A" battery is used, a ballast lamp PHILCO type 1F1 must be inserted in the socket provided in the dry "A" battery. This lamp acts as a voltage regulator, and maintains a constant potential of two volts on the filaments of the receiver tubes.

"BC"—Philco battery Part No. 41-8007 is used to supply B and C voltage. This battery contains a socket into which the receiver battery cable plug is inserted.

Current Drain: A Battery, 720 M.A.; B Battery, 21 M.A.

Philco Tubes Used: R. F. Amp. 1D5G, Det.—Osc. 1C7G, I. F. Amp. 1D5G, 2nd Det. A. V. C.; 1st audio, 1F7G, Driver 1H4G, Output 1J6G.

Frequency Ranges: Range 1—530 to 1720 K. C.; Range 2—2.3 to 7.4 M. C.; Range 3—7.35 to 22 M. C.

Intermediate Frequency: 470 K. C.

Speakers: KR-17—"B" Cabinet; HR-12—"J" Cabinet.

Alignment of the Compensators

To accurately adjust this receiver, precision test equipment is necessary. A signal generator such as the Philco Model 088 Signal Generator, covering from 110 to 20,000 K. C. is recommended for use in adjusting the compensators at the various frequencies specified. A visual indication of the receiver output is also necessary to obtain correct adjustment of the compensators. Philco Model 025 Circuit Tester contains a sensitive output meter and is recommended for these adjustments.

Philco Fibre Handle Screw-Driver No. 27-7059 and Variable Condenser Part No. 45-2325 complete the necessary equipment for these adjustments. The locations of the various compensators are shown in Figs. 2 and 3.

The following procedure must be observed in adjusting the compensators:—

DIAL ADJUSTMENT—The tuning condenser is set at the maximum capacity position, by turning the tuning knob counter-clockwise. Loosen the set screw of dial hub and set dial, with Glowing Indicator centered between the first and second index lines at the low frequency end of the broadcast scale.

OUTPUT METER—The 025 Output Meter is connected between one of the plate prongs of the 1J6G tube and the chassis. Then adjust the meter to use the (0-30) volt scale.

INTERMEDIATE FREQUENCY CIRCUIT

Frequency 470 K. C.

1. Connect the 088 Signal Generator output lead, through a .1 mfd. condenser to the control grid of the 1C7G tube, and the ground connection of the output lead to the chassis.
2. Set the range switch in position No. 1 (Broadcast). Rotate the tuning condenser of the receiver to approximately 580 K. C. Then adjust the signal generator for 470 K. C.
3. Adjust compensators (30S), (30P), (28S), and (28P) for maximum output, see Fig. 2.

RADIO FREQUENCY CIRCUIT

Tuning Range (7.35 to 22 M. C.)

1. Remove the signal generator output lead from the grid of the 1C7G, and connect it through the .1 mfd. condenser to terminal No. 1 on the aerial input panel. Connect the generator ground lead to terminal No. 3. Terminals 2 and 3 of the aerial input panel must be shorted with the connector link provided on the panel during the following adjustments.
2. Set the range switch in position No. 3 (extreme clockwise). Turn the signal generator and receiver dials to 20 M. C.
3. Now adjust compensator (20B) by turning the screw (clockwise) to the maximum capacity position, then slowly turn it counter-clockwise until a second maximum peak is reached on the output meter. The first peak from maximum capacity is the image signal and the receiver must not be adjusted to it. **NOTE:** In adjusting some receivers only one peak will be observed, therefore tune the compensator to maximum on this peak. If the above procedure is correctly performed, the image signal will be found at 19,060 M. C., by advancing the signal generator input, and turning the receiver dial to this frequency mark on the scale.

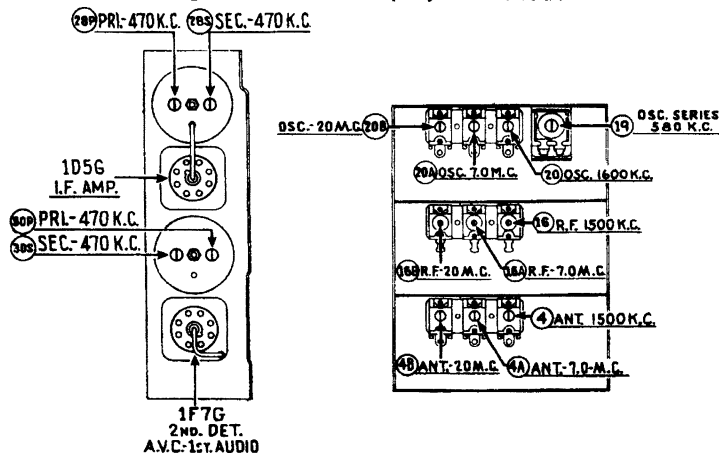


Fig. 2—I. F. Compensators, Top of Chassis

Fig. 3—R. F. Compensators, Under Side of Chassis

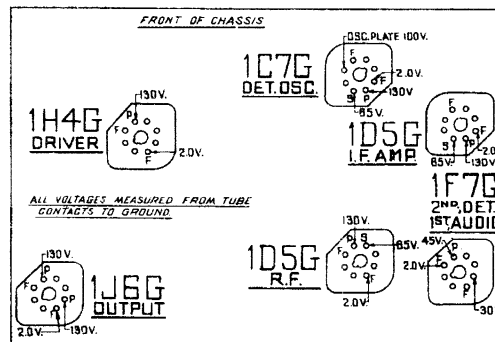


Fig. 1—Socket Voltages Underside of Chassis View

The voltages indicated by arrows were measured with a Philco 025 Circuit Tester which contains a voltmeter having a resistance of 1000 ohms per volt. Volume Control at minimum, range switch in broadcast position.

4. Leaving the signal generator and receiver dials at 20 M. C. the antenna and R. F. compensators (4B) and (18B) are now adjusted, by connecting a variable condenser (Philco Part No. 45-2325) across the oscillator compensator (20B) contact (first contact from the left side of the receiver facing rear underside view of the chassis) and ground. Now tune the added condenser until the second harmonic of the receiver oscillator beats against the signal from the generator, resulting in a maximum indication on the output meter. **NOTE:** It may be necessary to increase the signal generator output to obtain a signal of sufficient strength for reading on the output meter. Compensators (4B) and (18B) are now adjusted for maximum output. After these adjustments, remove the external condenser and readjust compensator (20B) as given in paragraph 3 above.

Tuning Range 2.3 to 7.4 M. C.

1. Turn the range switch to position No. 2 (middle range). Rotate the signal generator and receiver dials to 7.0 M. C. Then adjust compensator (20A) for maximum output.
2. Now turn the signal generator and receiver dials to 6 M. C. and adjust compensators (4A) Ant., and (18A) R. F. for maximum output.

Tuning Range 530 to 1720 K. C.

1. Turn the range switch to position No. 1 (Broadcast). Set the 088 signal generator indicator and the receiver dial to 1600 K. C.

Now adjust compensators (20) osc., (4) ant. and (18) R. F. for maximum output.

2. The low frequency end of this range is now adjusted as follows: Turn the signal generator and receiver dials to 580 K. C. Now tune compensator (19) for maximum output, then vary the tuning condenser of the receiver for maximum output about the 580 K. C. dial mark. Turn compensator (19) slightly to the right or left and vary the receiver tuning condenser for maximum output. If the output reading increases, turn compensator (19) in the same direction a trifle more and again vary the tuning condenser for maximum output. This procedure of first setting the compensator, and then varying the tuning condenser, is continued until there is no further gain in the output reading. When a decrease in output is noted turn the compensator in the opposite direction.

3. Set the signal generator and receiver dials as given in Paragraph 1 above and adjust compensator (20) for maximum output.

4. Now turn the signal generator and receiver dial, to 1500 K. C. and adjust compensators (4) ant. and (18) R. F. for maximum output.

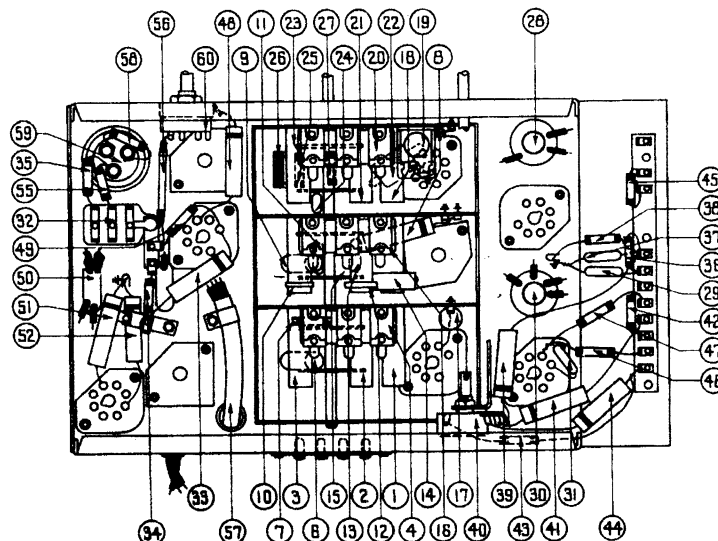


Fig. 4—Parts Location, Under Side of Chassis

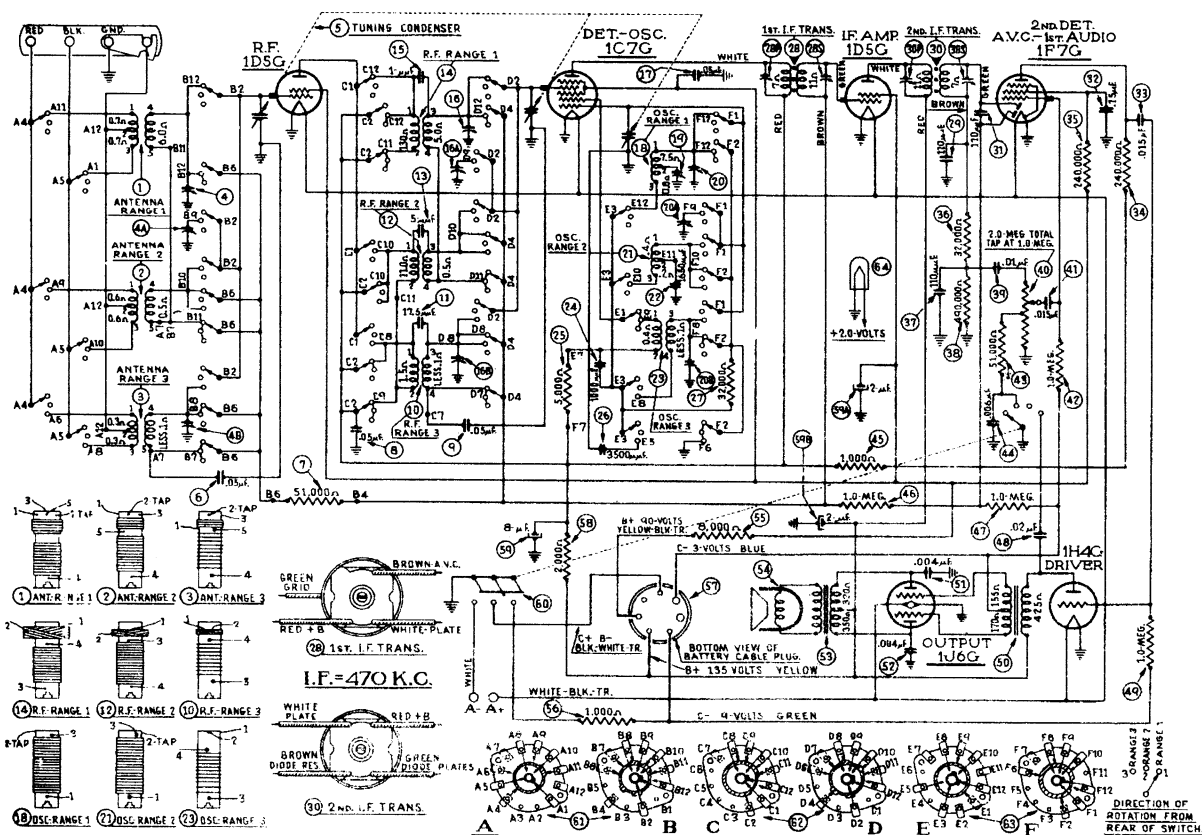


Fig. 5—Schematic Diagram

Replacement Parts—Model 37-623

Schem. No.	Description	Part No.	List Price	Schem. No.	Description	Part No.	List Price	Schem. No.	Description	Part No.	List Price
1	Antenna Transformer (530-1720 K.C.)	32-2108	\$0.80	45	Resistor (1,000 ohms, 1/2 watt)	33-210339	\$0.20	28-4117	Spring (Vol. Shaft)	28-4117	\$0.40/C
2	Antenna Transformer (2.3 to 7.4 M.C.)	32-2119	.65	46	Resistor (1 megohm, 1/2 watt)	33-510339	.20	27-6058	Socket (8 prong)	27-6058	.11
3	Antenna Transformer (7.35 to 22 M.C.)	32-2109	.75	47	Resistor (1 megohm, 1/2 watt)	33-510339	.20	27-6057	Socket (7 prong)	27-6057	.11
4	Compensator (Three Sections)	31-6092	.60	48	Condenser (.02 mfd. Tubular)	30-4113	.20	28-2726	Shield Tube	28-2726	.10
5	Tuning Condenser	31-1818	4.50	49	Resistor (1 megohm, 1/2 watt)	33-510339	.20	28-3898	Base Tube Shield	28-3898	.03
6	Condenser (.05 mfd. Tubular)	30-4020	.20	50	Audio Input Transformer	32-7637	2.00	28-3898	Grommet Mtg. R. F. Unit	28-3898	.03
7	Resistor (51,000 ohms, 1/2 watt)	33-351339	.20	51	Condenser (.004 mfd. Tubular)	30-4456	.20	28-2257	Sleeve Mtg. R. F. Unit	28-2257	.01
8	Condenser (.05 mfd. Tubular)	30-4020	.20	52	Condenser (.004 mfd. Tubular)	30-4456	.20	W-729	Screw Mtg. R. F. Unit	W-729	.45/C
9	Condenser (.05 mfd. Tubular)	30-4020	.20	53	Output Transformer	32-7638	1.60	28-3927	Washer Mtg. R. F. Unit	28-3927	.01
10	R. F. Transformer (7.35 to 22 M.C.)	32-2126	.55	54	Cone and Voice Coil Assembly KR-17	30-3540	.80	27-8339	Washer Mtg. R. F. Unit	27-8339	.40/C
11	Condenser (17.5 mmfd. Mica)	30-1079	.65	55	Cone and Voice Coil Assembly HR-12	30-3557	1.20	27-4325	Rubber Mtg. Tuning Condenser	27-4325	.02
12	R. F. Transformer (2.3 to 7.4 M.C.)	32-2106	.65	56	Resistor (8,000 ohms, 1/2 watt)	33-280339	.20	28-3808	Mtg. Plate (Trans.)	28-3808	.02
13	Condenser (5 mmfd. Mica)	30-1080	.75	57	Resistor (1,000 ohms, 1/2 watt)	33-210339	.20	27-8228	Mtg. Snacer (Trans.)	27-8228	.25
14	R. F. Transformer (530-1720 K.C.)	32-2105	.75	58	Cable Battery	41-3198	1.40	W-1635	Mtg. Screw (Trans.)	W-1635	.30/C
15	Condenser (Twist wire and lug)	38-7878	.20	59	Resistor (2,000 ohms, 1/2 watt)	33-220339	.20	38-7703	Terminal Panel I. F. Unit	38-7703	.25
16	Compensator (Three section)	31-1621	.20	60	Electrolytic Condenser (2, 2, 8 mfd.)	30-2161	1.60	41-3207	Cable Speaker	41-3207	.30
17	Condenser (.05 mfd. Tubular)	30-4020	.20	61	Power and Tone Control Switch	42-1207	1.20	W-1495	Mtg. Bolt (Chassis)	W-1495	1.50/C
18	Oscillator Transformer (530-1720 K.C.)	32-2120	.65	62	Range Switch (ANT)	42-1200	1.20	5189	Mtg. Rubbers	5189	.03
19	Compensator (580 K.C.)	31-6056	.55	63	Range Switch (R.F.)	42-1245	1.20	27-4360	Mtg. Bushing	27-4360	.10
20	Compensator (Three section)	31-6092	.60		Range Switch (Osc.)	42-1246	1.20	27-4330	Knob	27-4330	.10
21	Oscillator Transformer (2.3 to 7.4 M.C.)	32-2121	.40		Pilot Lamp Assembly	38-7875	.45	27-4331	Knob	27-4331	.10
22	Condenser (1650 mmfd.)	31-6096	.40		Pilot Lamp	34-2150	.22	27-4326	Knob	27-4326	.10
23	Oscillator Transformer (7.35 to 22 M.C.)	32-2110	.75		Vernier Drive Assembly	31-1871	.75	27-4332	Knob	27-4332	.10
24	Condenser (1,000 mmfd. Mica)	30-4453	.20		Dial	27-6214	.40	41-8007	"B" Battery	41-8007	
25	Resistor (5,000 ohms, 1/2 watt)	33-250393	.20		Dial Hub	28-7187	.12	172R	"A" Battery (Wet)	172R	
26	Condenser (3,500 mmfd. Semifixed)	31-6097	.50		Dial Clamp	28-2837	.10	41-8011	"A" Battery (Dry)	41-8011	
27	Resistor (32,000 ohms, 1/2 watt)	33-332339	.20		Dial Guard	27-8324	.02	1F1	Ballast Lamp	1F1	
28	First I. F. Transformer	32-2100	1.50		Set Screw	W-1400	.02	40-5939	Base Plate and Frame	40-5939	.75
29	Condenser (110 mmfd. Mica)	30-1031	.20		Gear (Dial)	28-7195	.10	27-8311	Gasket	27-8311	.01
30	Second I. F. Transformer	32-2102	1.50		Thrust Spring	28-8611	.01	27-8298	Glass	27-8298	.05
31	Condenser (110 mmfd. Mica)	30-1041	.20		Thrust Washer	28-3976	.30/C	28-3967	Ring	28-3967	.35
32	Condenser (.15 mfd. Bakelite)	62878G	.35		C Washer	28-3904	.01	W-1644	Screws	W-1644	.50/C
33	Condenser (.015 mfd. Tubular)	30-4226	.20		Gear (Drive)	31-1854	.25				
34	Resistor (240,000 ohms, 1/2 watt)	33-424339	.20		Mask	27-5198	.30				
35	Resistor (240,000 ohms, 1/2 watt)	33-424339	.20		Mask Arm and Assembly	31-1040					
36	Resistor (32,000 ohms, 1/2 watt)	33-332339	.20		Shaft Coupling (Mask)	31-1941					
37	Condenser (110 mmfd. Mica)	30-1031	.20		Felt Washers	27-8399					
38	Resistor (490,000 ohms, 1/2 watt)	33-449339	.20		Washer	27-8318	.50/C				
39	Condenser (.01 mfd. Tubular)	30-4124	.25		Snap Fastener	28-4279	.75/C				
40	Volume Control	33-5158	1.00		Indicator Bracket and Lens Assembly	38-7912	.30				
41	Condenser (.015 mfd. Tubular)	30-4368	.20		Mask Guide and Lamp Support	38-7844	.15				
42	Resistor (1 megohm, 1/2 watt)	33-510339	.20		Shaft and Index Plate (Range Switch)	42-1173	.50				
43	Resistor (51,000 ohms, 1/2 watt)	33-351339	.20		Shaft (Volume Control)	38-8059					
44	Condenser (.006 mfd. Tubular)	30-4125	.20		Retaining Clip (Vol. Shaft)	28-4394	.01				

Figures in black type indicate circled figures in Base View.

Prices Subject to Change without Notice

FOR TIME SAVING AND CONVENIENCE USE PHILCO "IDENTIFIED" RESISTORS

PHILCO Model 37-624

Electrical Specifications

Type Circuit: Superheterodyne, using a vibrator unit operated by a 6 volt storage battery for supplying "B" power to the receiver, and a Class B audio output circuit.

Power Supply: 6 volt storage battery, Philco Type 116R.

Current Drain: 1.5 Amps.

Philco Tubes Used: 6-1D5G, R. F. Amp.; 1C7G, Det. Osc.; 1D5G I. F. Amp.; 1F7G, 2nd Det.—1st Audio A. V. C.; 1H4G, Audio Driver; 1J6G, Output.

Frequency Ranges: Three. Range 1—530 to 1720 K. C.; Range 2—2.3 to 7.4 M. C.; Range 3—7.35 to 22 M. C.

Intermediate Frequency: 470 K. C.

Speakers: KR-17. "B" Cabinet; HR-12. "J" Cabinet.

Alignment of Compensators

EQUIPMENT REQUIRED: (1) Signal Generator; Philco Model 088 (fundamental frequency 110 to 20000 K. C.) is the correct instrument for this purpose; (2) output meter. **Philco Model 025 Circuit Tester** incorporates an accurate, sensitive output meter and is recommended; (3) Fibre handle screw-driver (Philco Part No. 27-7059); (4) Special variable condenser (Philco Part No. 45-2325).

DIAL CALIBRATION: Set the tuning condenser at the maximum capacity position. Loosen the set screw of the dial hub and set dial, with the glowing indicator centered between the first and second index lines, at the low frequency end of the broadcast scale. Tighten set screw in this position.

INTERMEDIATE FREQUENCY CIRCUIT

Frequency 470 K. C.

1. Connect the 088 Signal Generator output lead through a .1 mfd. condenser to the control grid of the 1C7G tube, and the ground connection of the Generator to the chassis. Turn the Volume Control to maximum volume position.
2. Set the range switch in position No. 1 (Broadcast), then rotate the tuning condenser of the receiver to approximately 580 K. C. and adjust the signal generator for 470 K. C.
3. Adjust compensators (41S) 2nd I. F. Sec., (41P) 2nd I. F. Pri., (40S) 1st I. F. Sec., and (40P) 1st I. F. Pri. for maximum reading on the output meter.

RADIO FREQUENCY CIRCUIT

Tuning Range (7.35) to (22.0) M. C.

1. Remove the signal generator output lead from the grid of the 1C7G tube and connect it through the .1 mfd. condenser to terminal No. 1 on aerial input panel and the generator ground lead to terminal No. 3, rear of chassis. Terminals 2 and 3 must be connected by the shorting link provided on the panel.
2. Set the range switch in position No. 3. Turn the receiver and signal generator dials to 18 M. C. Now adjust compensator (24B) by turning the screw (clockwise) to the maximum capacity position, then slowly turning it (counter-clockwise) until a second peak signal is reached on the output meter. The first peak from maximum capacity is the image signal and must not be used. **Note:** In adjusting some receivers only one peak will be observed, therefore, tune the compensator to maximum on this peak. If the above procedure is correctly performed, the image signal will be found at 17.06 M. C. by advancing the signal generator attenuator and turning the receiver dial to this frequency mark on the dial.
3. The antenna and R. F. Compensators (6B) and (20B) are now adjusted by connecting a variable condenser of approximately 350 mmfd., Philco Part No. 45-2325 across the oscillator section of the gang condenser and ground. Leaving the signal generator and receiver dials at 18 M. C., tune the added condenser from the maximum capacity point until the second harmonic of the receiver oscillator beats against the signal from the generator thereby bringing in the signal. The antenna and R. F. compensators (6B) and (20B) are then adjusted for maximum output. Now remove the external condenser and readjust compensator (24B) for maximum output.

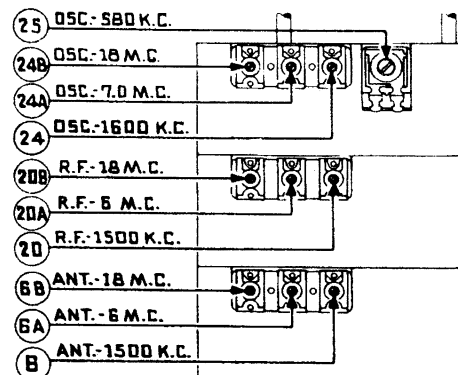


Fig. 3—R. F. Compensators

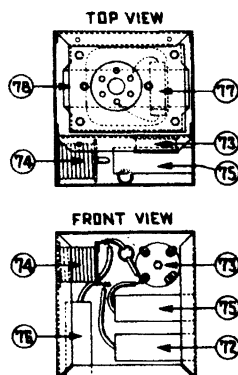


Fig. 3—Power Unit

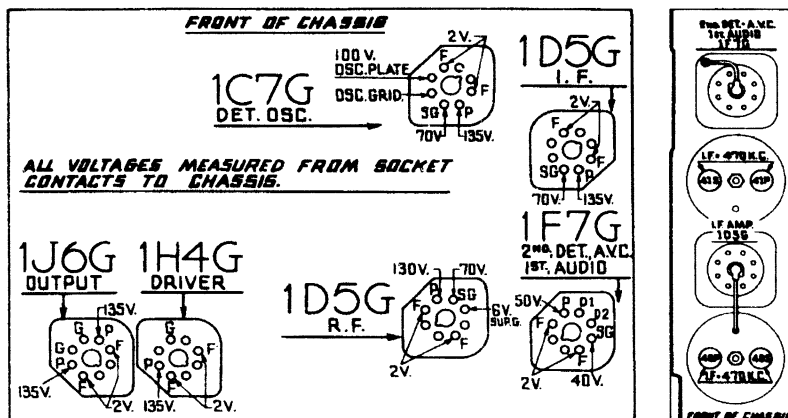


Fig. 1—Socket Voltages and R. F. Compensators

The voltages indicated by arrows were measured with a Philco 025 Circuit Tester which contains a voltmeter having a resistance of 1000 ohms per volt. Volume Control at maximum, Storage Battery fully charged.

Fig. 2—I. F. Compensators

Tuning Range (2.3) to (7.4) M. C.

1. Set range switch in position 2. Rotate signal generator and receiver dials to 7.0 M. C. Now adjust compensator (24A) for maximum output.
2. Turn the signal generator and receiver dials to 6.0 M. C. and adjust compensators (20A) R. F. and (6A) Ant. for maximum output.

Tuning Range (530) to (1720) K. C.

1. Set range switch in position No. 1 (Broadcast). Rotate the signal generator and receiver dials to 1600 K. C. Now adjust compensators (24) Osc., (20) R. F. and (6) Ant. for maximum output.
2. Rotate the signal generator and receiver dials to 580 K. C. Compensator (25) Osc. series is now adjusted for maximum output as follows:
First tune compensator (25) for maximum output, then vary the tuning condenser of the receiver for maximum output about the 580 K. C. dial mark. Now turn compensator (25) slightly to the right or left and vary the receiver tuning condenser for maximum output. If the out reading increases, turn compensator (25) in the same direction a trifle more, and again vary the tuning condenser for maximum output. If the output decreases, set the compensator in the opposite direction. This procedure of first setting the compensator and then varying the tuning condenser is continued until there is no further gain in output reading.
3. Readjust compensator (24) for maximum output, by turning the signal generator and receiver dials to 1600 K. C.
4. Turn the signal generator and receiver dials to 1500 K. C. and adjust compensators (20) R. F. and (6) Ant. for maximum output.

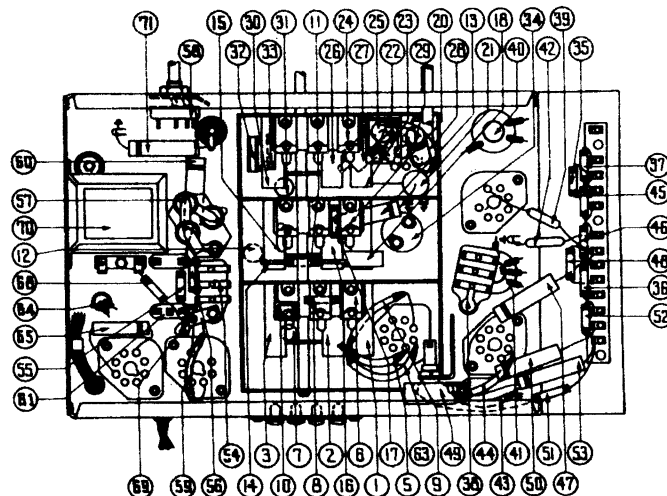
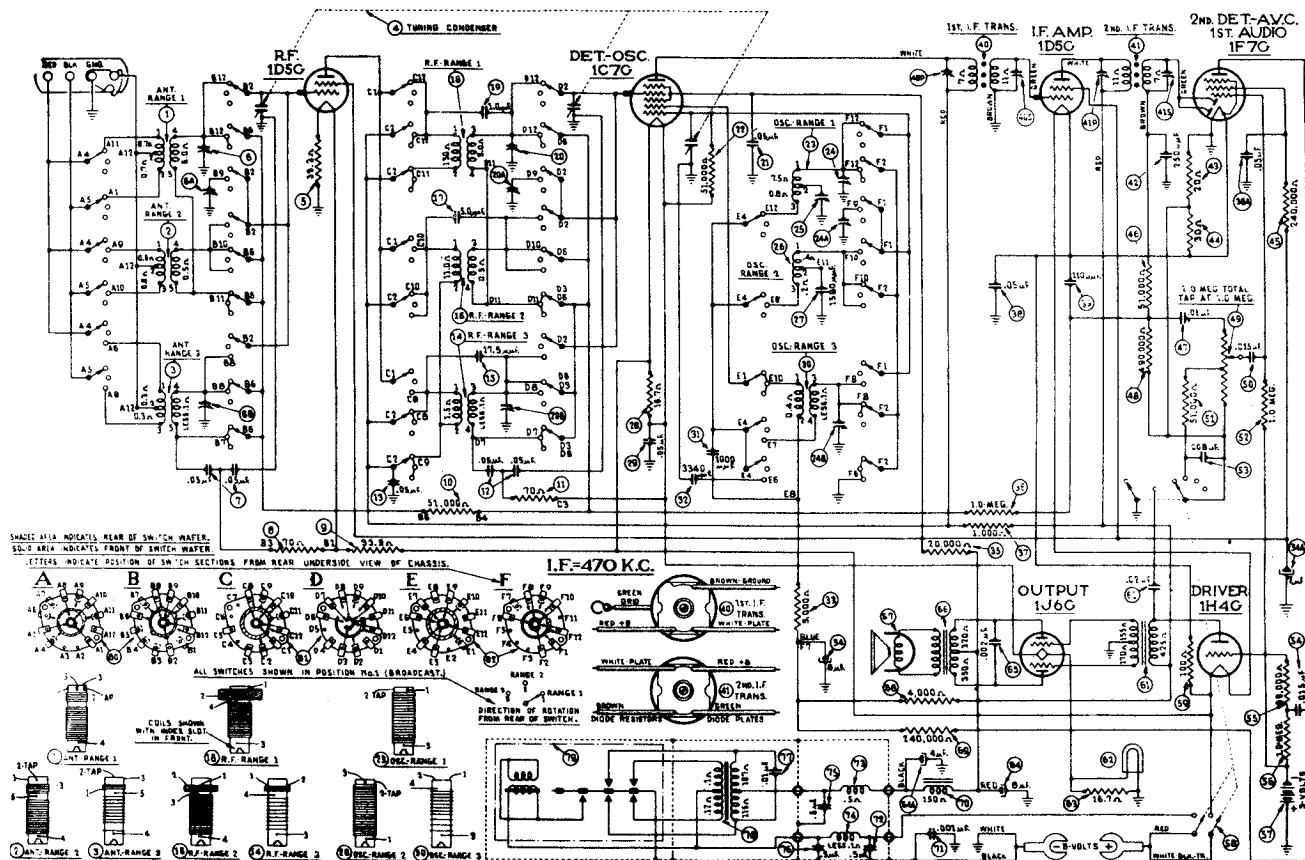


Fig. 4—Parts Locations—Underside of Chassis



October 7th, 1936

Replacement Parts—Model 37-624

Schem. No.	Description	Part No.	List Price	Schem. No.	Description	Part No.	List Price	Schem. No.	Description	Part No.	List Price
1	Antenna Transformer (530-1720 K. C.)	32-2108	\$1.60	43	Resistor (20 ohms flexible)	33-3043	\$0.25	Set Screw	W-1641		\$0.02
2	Antenna Transformer (2.3 to 7.4 M. C.)	32-2119	1.20	44	Resistor (30 ohms flexible)	33-3119	.25	Knob Tuning	27-4330		.10
3	Antenna Transformer (7.35 to 22 M. C.)	32-2109	1.20	45	Resistor (24000 ohms, 1/2 watt)	33-424339	.20	Knob Tuning Vernier	27-4331		.10
4	Tuning Condenser	31-1818	5.00	46	Resistor (51000 ohms, 1/2 watt)	33-513339	.20	Vernier Drive Assembly	31-1871		.75
5	Resistor (33.3 ohms flexible)	33-3233	.20	47	Condenser (.01 mfd. tubular)	30-4124	.25	Knob Drive Switch	27-4326		.10
6	Compensator (three sections)	31-6092	.60	48	Resistor (49000 ohms, 1/2 watt)	33-490339	.20	Knob Tone and Volume	27-4332		.10
7	Condenser (.05 mfd. dual tubular)	30-4394	.35	49	Volume Control	33-5166	1.00	Mask	27-4332		.30
8	Resistor (70 ohms, 1/2 watt)	33-070339	.20	50	Condenser (.015 mfd. tubular)	30-4358	.20	Mask Arm and Link Assembly	31-1940		.15
9	Resistor (33.3 ohms flexible)	33-3233	.20	51	Resistor (51000 ohms, 1/2 watt)	33-513339	.20	Shaft Coupling and Set Screw	27-8399		.30
10	Resistor (51000 ohms, 1/2 watt)	33-513339	.20	52	Resistor (1.0 megohms, 1/2 watt)	33-510339	.20	Felt Washer	38-5059	Per C	.75
11	Resistor (70 ohms, 1/2 watt)	33-070339	.20	53	Condenser (.008 mfd. tubular)	30-4112	.20	Snap Fastener	28-4279	Per C	.75
12	Condenser (.05 mfd. dual tubular)	30-4394	.35	54	Condenser (.015 mfd. single bakelite)	3793-SU	.35	Mask Guide and Lamp Support	38-7844		.15
13	Condenser (.05 mfd. tubular)	30-4123	.20	55	Resistor (99000 ohms, 1/2 watt)	33-399339	.20	Indicator Bracket Assembly	38-7912		.30
14	R. F. Transformer (7.35 to 22 M. C.)	32-2126	.70	56	Resistor (1.0 megohms, 1/2 watt)	33-510344	.20	Volume Control Shaft	28-4394		.01
15	Condenser (.175 mmfd. mica)	30-1079	.20	57	Bias Cell	41-8009	.30	Retaining Clip	28-4117	Per C	.40
16	R. F. Transformer (2.3 to 7.4 M. C.)	32-2106	.70	58	Power Switch and Tone Control	42-1242	1.00	Socket 7 Frong	27-6057		.11
17	Condenser (.5 mmfd. mica)	30-1077	.20	59	Resistor (100 ohms flexible)	33-3187	.20	Socket 8 Frong	27-6058		.10
18	R. F. Transformer (530 to 1720 K. C.)	32-2105	1.00	60	Condenser (.02 mfd. tubular)	30-4113	.20	Tube Shield	28-2726		.10
19	Condenser (1. mmfd. wire and lug twisted)	38-7878	.75	61	Audio Transformer	32-7637	2.00	Base	28-3988		.03
20	Compensator (three sections)	31-6121	.75	62	Pilot Lamp	34-2150	.22	Bias Cell Panel Assembly	38-7275		.20
21	Condenser (.05 mfd. tubular)	30-4020	.20	63	Resistor (16.7 ohms flexible)	33-3298	.20	Battery Cable	41-3204		1.20
22	Resistor (51000 ohms, 1/2 watt)	33-513339	.20	64	Electrolytic Condenser (4, 8 mfd.)	30-2160	2.00	Speaker Cable	41-3207		.30
23	Oscillator Transformer (530 to 1720 M. C.)	32-2120	1.00	65	Condenser (.002 mfd. tubular)	30-4177	.20	A Battery	116-R		.04
24	Compensator (three sections)	31-6092	.60	66	Output Transformer KR-17, HR-12	32-7639	1.60	Mtg. Grommet (R. F. Unit)	27-4317		.01
25	Compensator (Osc. Broadcast series)	31-6056	.55	67	Cone Voice Coil KR-17	36-3540	.80	Mtg. Sleeve (R. F. Unit)	28-2257		.01
26	Oscillator Transformer (2.3 to 7.4 M. C.)	32-2121	.70	68	Resistor (4000 ohms, 1/2 watt)	33-240339	.20	Mtg. Screw (R. F. Unit)	W-729	Per C	.45
27	Condenser (1580 mmfd.)	31-6138	.40	69	Resistor (24000 ohms, 1/2 watt)	33-424339	.20	Mtg. Washer (R. F. Unit)	27-7807	Per C	.50
28	Resistor (16.7 ohm flexible)	33-3298	.20	70	Filter Choke	32-7543	1.35	Mtg. Rubber (Tuning Cond.)	27-4325		.02
29	Condenser (.05 mfd. tubular)	30-4020	.20	71	Condenser (.001 mfd. tubular)	30-4201	.20	Mtg. Plate (R. F. Trans.)	28-3908		.02
30	Oscillator Transformer (7.35 to 22 M. C.)	32-2110	.70	72	Condenser (.5 mfd. metal case)	30-4296	.60	Mtg. Spacer (R. F. Trans.)	27-8228		.01
31	Condenser (1000 mmfd. tubular)	30-4453	.20	73	B Choke	32-1932	.25	Mtg. Screw (R. F. Trans.)	W-1635	Per C	.30
32	Condenser (3340 mmfd. semi-fixed)	31-6137	.60	74	A Choke	32-1954	.40	Mtg. Bushing (Chassis)	27-4360		.04
33	Resistor (5000 ohms, 1/2 watt)	33-250339	.20	75	Condenser (.5 mfd. metal case)	30-4296	.60	Mtg. Washer Rubber (Chassis)	5189		
34	Electrolytic Condenser (Blue 8 mfd., Plain 2 mfd.)	30-2171	2.00	76	Condenser (.01 mfd. tubular)	30-4381	.25				
35	Resistor (20000 ohms, 1/2 watt)	33-320339	.20	77	Power Transformer	32-7682	2.20				
36	Resistor (1.0 megohm, 1/2 watt)	33-510339	.20	78	Vibrator	41-3222	5.25				
37	Resistor (100 ohms, 1/2 watt)	33-210339	.20	79	Range Switch (Ant.)	42-1243	1.20				
38	Condenser (.05 mfd. dual bakelite)	4989-DG	.40	80	Range Switch (R. F.)	42-1244	1.20				
39	Condenser (110 mmfd. mica)	30-1031	.20	81	Range Switch (Osc.)	42-1246	1.20				
40	1st I. F. Transformer	32-2100		82	Switch Index Plate and Shaft	42-1173	.50				
41	2nd I. F. Transformer	32-2102			Pilot Lamp Assembly	38-7875	.45				
42	Condenser (250 mmfd. mica)	30-1032	.25		Dial	27-5214	.50				
					Hub	28-7187	.12				
					Clamp	28-2837	.10				

Figures in black type indicate circled figures in Base View.

Prices Subject to Change without Notice

PHILCO RADIO & TELEVISION CORPORATION
Philadelphia, Pa.

October 7th, 1936

Printed in U. S. A.

PHILCO Model 37-630

General Description

Model 37-630 is a 6 tube superheterodyne receiver for operation on alternating current, having three tuning ranges, covering standard broadcast and short-wave frequencies, and using the new Philco High-Efficiency self-centering glass tubes.

The circuit includes the Philco "Foreign Tuning System" controlled by the tuning range switch which provides maximum sensitivity and noise reduction, when used with the **Philco High Efficiency Aerial** supplied with the receiver. One stage of Radio Frequency amplification which greatly increases the signal to noise ratio, automatic bass compensation in the volume control circuit, shadow tuning and a separate diode circuit for automatic volume control are also incorporated in this receiver.

The red and black leads of the High-Efficiency Aerial "transmission line" are connected to terminals 1 and 2 respectively, of the terminal panel provided at the rear of the chassis. Connect the jumper on the terminal panel across terminals 3 and 4.

If a temporary aerial is used, the jumper should be across terminals 2 and 3. The aerial connects to terminal 1 and the ground to terminal 3.

A good ground connection is desirable in all installations. Make the ground connection from the nearest water or radiator pipe to terminal 3 on the terminal panel.

The chassis is constructed in three basic assembly units, concentrating each circuit in a single unit.

The Radio Frequency unit, located in the center of the chassis, contains a 6K7G tube which functions as a Radio Frequency Amplifier; a 6A8G tube, for the Detector-Oscillator circuit; individual Antenna, R. F. Amplifier and Oscillator coils for each tuning range; selector switch; compensating condensers for all coils; and other parts necessary for the associated circuits. The

unit is separately mounted on rubber grommets, cushioning it from the main chassis.

The Intermediate Frequency unit, mounted on the right hand side of the chassis (facing front of set) consists of the Intermediate Frequency transformers, compensating condensers, a 6K7G for the I. F. Amplifier stage, and a 6Q7G tube as the second detector—automatic volume control and first audio stage. All voltages supplied to the I. F. and R. F. units are furnished from a terminal strip mounted in this unit.

The Power Pack and Audio Output circuits, together with the required voltage dividers and filter condensers are mounted in the power unit. This unit contains a 6F6G tube and a 5Y4G tube for the Power Output and Rectifier Circuits respectively, and the combined tone control and power switch.

Schematic Diagram, Fig. 5, is numbered, indicating all important parts. These numbers correspond with the parts layout shown in Fig. 6. In addition, the range switch wafers are shown on the schematic diagram. The contacts on each wafer are numbered and lettered to indicate their connection points in the schematic diagram, which are also lettered and numbered. The physical drawings of each coil used in the receiver are also shown on schematic diagram Fig. 5. The connections of these coils are numbered on the coil drawing and on the schematic diagram.

Fig. 1 shows the Voltage measurements taken from the bottom of the socket at each contact. In Fig. 2, the correct position of the dial indicator, for proper adjustment of the compensator condenser is shown. Fig. 3 and 4 are the locations of the I. F. and R. F. compensators respectively.

This receiver is used in cabinets type X code 121 and type T code 122. These instructions, however, will cover both types.

Electrical Specifications

Voltage Rating: 115 Volts A.C.

Frequency Rating: 50 to 60 cycles.

For 25 to 40 cycle operation the Power Transformer marked with asterisk in parts list is used.

Power Consumption: 65 Watts.

Types and Number of Tubes: 2 type 6K7G, R. F. and I. F. Amplifiers; 1 type 6A8G, Detector-Oscillator; 1 type 6Q7G, 2nd

Detector, Automatic Volume Control and 1st Audio; 1 type 6F6G, Output; and 1 type 5Y4G Rectifier.

Undistorted Output: 3 watts.

Intermediate Frequency: 470 K. C.

Tuning Ranges: Three. Range 1.—530 to 1720 Kilocycles; Range 2.—2.3 to 7.4 Megacycles; Range 3.—7.35 to 22 Megacycles.

Speakers: X Cabinet—H24
T Cabinet—K38

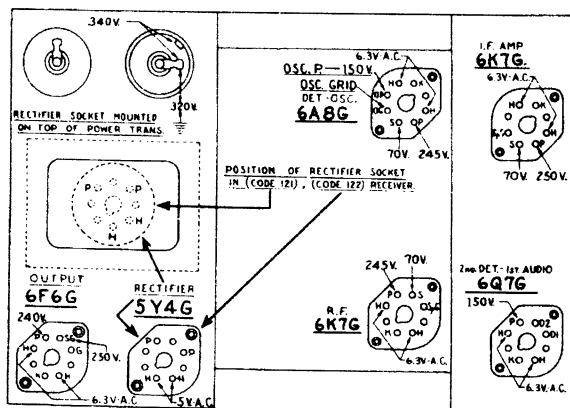
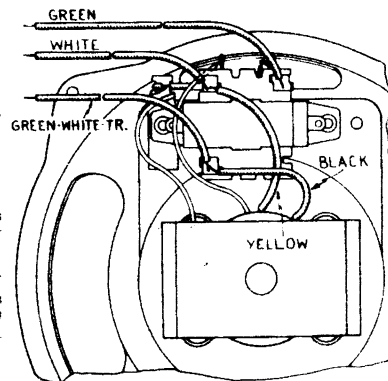


Fig. 1. Socket Voltages
Measured from Socket Contact to Ground
Underside of Chassis View

The voltages indicated by arrows were measured with a Philco 925 Circuit Tester which contains a voltmeter having a resistance of 1000 ohms per volt. Volume Control at minimum. Range Switch in broadcast position. Line voltage 115 A.C.

POWER TRANSFORMER DATA

Lead No. Shown on Schematic	A.C. Volts	Current	Circuit	Color	Resistance
1-2	120	—	Pri.	White	5 ohms
3-4	5.0	2.0 A.	Fil. Rectifier	Blue	.1 ohm
5-7	670	70 Ma.	High Voltage Sec.	Yellow	145 ohms 155 ohms
6	—	—	Center Tap of 5-7	—	—
8-9	6.7	2.1 A.	Fil.	Black	.1 ohm



Speaker Wiring

When replacing any part of the speaker, the hum bucking coil connections should be connected for minimum hum.

Run 2.

While the circuit arrangement remains the same, the locations of the parts are slightly changed in this Run. Bakelite condenser (C) Part No. 3793-DG is removed from front and placed in the rear of the chassis. Tubular condenser (C) Part No. 30-4380 is replaced with a Part No. 8318-SU bakelite condenser placed in the position formerly held by 3793-DG.

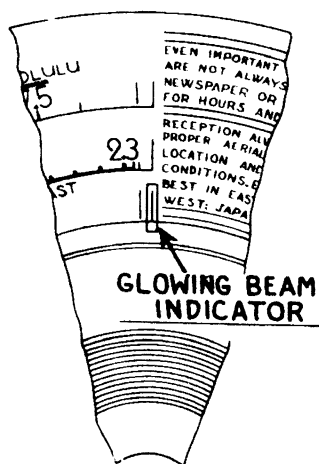


Fig. 2—Dial Calibration

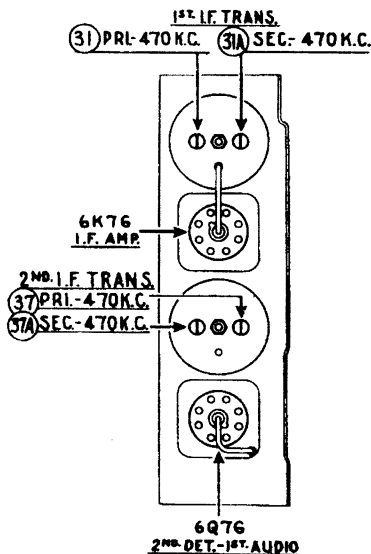


Fig. 3—Locations of I. F. Compensators

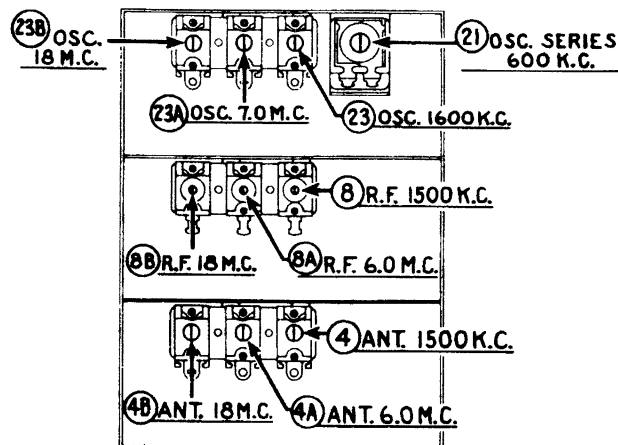


Fig. 4—Locations of R. F. Compensators

Alignment of the Compensators

The accurate adjustment of the various compensating condensers is vital to the proper functioning of this receiver. There are four compensating condensers in the I. F. Circuit, four in the Oscillator Circuit, three in the R. F. Amplifier Circuit and three in the Antenna Circuit. Incorrect adjustment will cause loss of sensitivity, unsatisfactory tone, and poor selectivity.

To accurately adjust this receiver, precision test equipment is necessary. A signal generator such as the PHILCO MODEL 088 SIGNAL GENERATOR, covering from 110 to 20,000 K. C. is recommended for adjusting the compensators at the various frequencies specified. A visual indication of the receiver output is also necessary to obtain correct adjustment of the compensators. PHILCO MODEL 025 CIRCUIT TESTER contains a sensitive output meter and is recommended for these adjustments.

Philco Fibre Handle Screw-driver No. 27-7059 completes the necessary equipment for these adjustments. The locations of the various compensators are shown in Figs. 3 and 4.

The following procedure must be observed in adjusting the compensators:

Dial Calibration—In order to adjust this receiver correctly, the dial must be aligned to track properly with the tuning condenser. To do this, rotate the tuning condenser control to the extreme counter-clockwise position (maximum capacity). Loosen the screw of dial hub, then turn dial until the glowing indicator is centered on the first index line of dial scale (see Fig. 2). Now tighten the dial hub set screw in this position.

Shadow Meter Adjustment—Remove aerial and allow tubes to warm up. Then adjust shadow meter as follows:

- 1 Move the Shadow meter coil backwards and forwards, until the shadow is within one-eighth of an inch of each side of the screen.
- 2 Remove the Rectifier tube from its socket, and rotate the shadow meter coil for minimum shadow width.
- 3 Replace the Rectifier tube. The shadow should then return to maximum width or within one-eighth of an inch of each side of the screen. If the shadow does not return to maximum width, operations 1 and 2 should be continued until it does.

Output Meter The 025 Output Meter is connected to the plate and cathode terminals of the (6F6G) tube. Adjust the meter to use the (0-30) Volt Scale.

During the I. F. and R. F. adjustments, the signal generator output should be maintained at the lowest possible level that will give an indication on the output meter.

INTERMEDIATE FREQUENCY CIRCUIT

- Frequency 470 K. C.**
- 1 Connect the 088 Signal Generator output lead, through a .1 mfd. condenser, to the control grid of the 6A8G tube; and the ground connection of the output lead to the chassis.
 - 2 Set the range switch in position No. 1 (Broadcast), then rotate the tuning condenser of the receiver to the maximum capacity position (counter-clockwise), and adjust the signal generator for 470 K. C.
 - 3 Adjust compensators 31a 2nd I. F. Sec., 37 2nd I. F. Pri., 31a 1st I. F. Sec., and 37 1st I. F. Pri. for maximum reading on output meter.

RADIO FREQUENCY CIRCUIT

Tuning Range—7.3 to 22.0 M. C.

- 1 Remove the signal generator output lead from the grid of 6A8G tube, and connect it through a .1 mfd. condenser to terminal No. 1 on aerial input panel, and the generator ground lead to terminal No. 3, rear of chassis.

- (a) Terminals 2 and 3 of aerial input panel must be connected with connector link provided on the panel, during these adjustments.

- 2 Set the tuning range switch in position No. 3 (Short Wave). Turn the signal generator and receiver dials to 18 M. C. and adjust compensators 23b Osc., 8b R. F. and 4b Ant. for maximum output. (See Note (a) below).

- (a) The adjustment of the Radio Frequency compensator on the high frequency range causes a slight detuning of the oscillator circuit. In order to overcome this detuning effect, connect a variable condenser of approximately 350 mmfd., having a good vernier drive, across the oscillator section of the tuning condenser. Leaving the signal generator and receiver dials at 18 M. C., tune the added condenser so that the second harmonic of the receiver oscillator will beat against the signal from the 088 signal generator bringing in the signal. The antenna and R. F. compensators 4b and 8b should then be adjusted to give maximum output. Now remove the external condenser and turn compensator 23b to maximum capacity (clockwise) then without moving signal generator or receiver tuning condenser, back off compensator 23b (counter-clockwise) until a second peak is reached on the output meter. The first peak is caused by tuning to the image frequency signal and must not be used.

Tuning Range 2.3 to 7.4 M. C.

- 1 Turn the range switch to position No. 2 (Police). Rotate the signal generator and receiver dials to 7.0 M. C. Then adjust compensator 23a for maximum output. Now turn the signal generator and receiver dials to 6.0 M. C. and adjust compensators 8a R. F. and 4a Ant. for maximum reading on the output meter.

Tuning Range 530 to 1720 K. C.

- 1 Set the range switch in position No. 1 (Broadcast). Set the 088 Signal Generator indicator at 800 K. C. and the receiver dial at 1600 K. C.
 - (a) In adjusting the receiver at 1600 K. C. the second harmonic of 800 K. C., to which the signal generator is tuned, is used. The second harmonic of 800 K. C. is 1600 K. C. Now adjust compensators 23 Osc., 8 R. F. and 4 Ant. for maximum reading on output meter.
- 2 The low frequency end of the range is now tuned by turning the signal generator and receiver dials to 600 K. C. and adjusting compensator 21 Osc. Series (see Note (a) below) for maximum reading on output meter.
 - (a) While compensator 21 is being adjusted, the tuning condenser must be rolled for maximum output. This is accomplished as follows:—First tune compensator 21 for maximum output. Then vary the tuning condenser for maximum output at 600 K. C. Now retune compensator 21, and again vary the tuning condenser back and forth at 600 K. C. for maximum output. This operation of first turning the compensator then the tuning condenser is continued until maximum output is obtained at the 600 K. C. frequency.
- 3 After the low frequency (600 K. C.) end of the range is adjusted, the 1600 K. C. end is readjusted, as given in Paragraph (1) above, to correct any variation that the low frequency series compensator may have caused in the alignment of the high frequency end.
- 4 Now turn the signal generator and receiver dials to 1500 K. C. and readjust compensators 4 Ant., and 8 R. F., for maximum output.

Use . . .

PHILCO MODEL 088 SIGNAL GENERATOR

The Instrument Designed
and Specified by Philco
Engineers for Adjusting
Philco Radios

Parts List—Model 37-630

Schematic No.	Description	Part No.	List Price
1	Antenna Transformer (Broadcast)	32-2108	\$0.80
2	Antenna Transformer (Police)	32-2119	.65
3	Antenna Transformer (S. W.)	32-2109	.75
4	Compensator Ant. 1500 K. C.	31-6092	.60
5	Condenser (.05 mfd. Tubular)	30-4020	.20
6	Resistor (51000 ohms 1/2 watt)	33-351339	.20
7	Tuning Condenser	31-1818	4.50
8	Compensator (R. F. 1500 K.C.)	31-6092	.60
9	R. F. Transformer (Broadcast)	32-2105	.75
10	R. F. Transformer (Police)	32-2106	.65
11	Condenser (1.0 mmfd.)		
12	Condenser (14 mmfd. Mica)	30-1073	.20
13	R. F. Transformer (S. W.)	32-2126	.55
14	Condenser (.05 mfd. Tubular)	30-4123	.20
15	Condenser (.05 mfd. Tubular)	30-4020	.20
16	Resistor (51000 ohms 1 watt)	33-351439	.20
17	Resistor (20000 ohms 1 watt)	33-320439	.20
18	Electrolytic Condenser (16 mfd.)	30-2118	1.65
19	Resistor (10000 ohms 1/2 watt)	33-310339	.20
20	Condenser (.1 mfd. Tubular)	30-4170	.25
21	Compensator (Osc. 600 K.C.)	31-6056	.55
22	Osc. Transformer (Broadcast)	32-2120	.65
23	Compensator (Osc. 1600 K.C.)	31-6092	.60
24	Osc. Transformer (Police)	32-2121	.40
25	Condenser (1650 mmfd. Semi-fixed)	31-6096	.40
26	Osc. Transformer (S. W.)	32-2110	.75
27	Condenser (250 mmfd. Mica)	30-1032	.25
28	Condenser (3500 mmfd. Semi-fixed)	31-6097	.50
29	Resistor (70000 ohms 1/2 watt)	33-370339	.20
30	Resistor (32000 ohms 1/2 watt)	33-332339	.20
31	Compensator (1st I. F. Pri. 470 K.C.)	Part of 39	
32	1st I. F. Transformer	32-2100	1.50
33	Shadowmeter	45-2189	2.50
34	Resistor (400 ohm Bakelite)	33-1211	.20
35	Condenser (.05 mfd. Tubular)	30-4020	.20
36	2nd I. F. Transformer	32-2102	1.50
37	Compensator (2nd I. F. Pri. 470 K.C.)	Part of 42	
38	Condenser (110 mmfd. Mica)	30-1031	.20
39	Resistor (51000 ohms 1/2 watt)	33-351339	.20
40	Condenser (.01 mfd. Tubular)	30-4124	.25
41	Resistor (490000 ohms 1/2 watt)	33-449339	.20
42	Condenser (110 mmfd. Mica)	30-1031	.20
43	Condenser (110 mmfd. Mica)	30-1031	.20
44	Resistor (1 megohm 1/2 watt)	33-510339	.20
45	Condenser (.015 mfd. Tubular)	30-4358	.20
46	Resistor (51000 ohms, 1/2 watt)	33-351339	.20
47	Condenser (.006 mfd. Tubular)	30-4112	.20
48	Condenser (.015 mfd. Tubular)	30-4226	.20
49	Volume Control	33-5158	1.00
50	Resistor (1 megohm 1/2 watt)	33-510339	.20
51	Voice Coil and Cone, H24 Speaker	02625	1.20
52	Voice Coil and Cone, K38 Speaker	36-3174	.80
53	Output Transformer, H24	2580	1.00
54	Output Transformer, K38	2580	1.00
55	Resistor (1 megohm 1/2 watt)	33-510339	.20
56	Condenser (0.1 mfd. Tubular)	30-4122	.20
57	Resistor (490000 ohms 1/2 watt)	33-449339	.20
58	Condenser (.008 mfd. Tubular)	30-4112	.20
59	Condenser (.03 mfd. Tubular)	30-4380	.20
60	Resistor (1 megohm 1/2 watt)	33-510339	.20
61	Tone Control and A. C. Switch	42-1182	.75
62	Electrolytic Condenser (8 mfd.)	30-2024	1.10
63	Bias Resistor	33-3277	.20
64	Electrolytic Condenser (12 mfd.)	30-2117	1.20
65	Field Coil Assembly, H24 Speaker	36-3665	
66	Field Coil Assembly, K38 Speaker	36-3718-01	
67	Resistor (9000 ohms, 2 watt)	33-290539	.30
68	Power Transformer (115 Volt 50-60 cycle) Code 121	32-7583	4.50
69	Power Transformer (115 Volt 25-40 cycle) Code 121	32-7584	6.50
70	Power Transformer (115 Volt 50-60 cycle) Code 122	32-7626	4.25
	Power Transformer (115 Volt 50-60 cycle) Code 122	32-7627	

Figures in black type indicate circled figures in Base View.

May, 1936

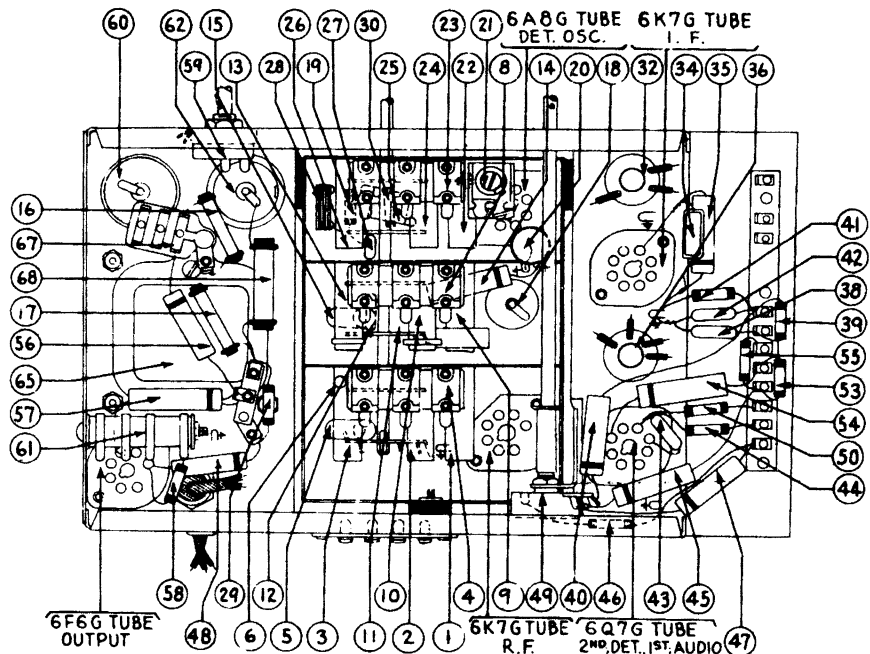


Fig. 6—Base View

Schematic No.	Description	Part No.	List Price
66	Pilot Lamp	34-2039	\$0.15
67	Condenser (.015-.015 mfd. Double Bakelite)	3793 DG	.40
68	Wave Switch Antenna	42-1170	1.10
69	Wave Switch R. F.	42-1171	1.00
70	Wave Switch Osc.	42-1172	1.10
	Wave Switch Indexing Plate & Shaft	42-1173	.50
	Pilot Lamp Assembly	38-7706	.35
	Dial	27-5203	.60
	Dial Hub	28-7187	.12
	Dial Clamp	28-2837	.10
	Dial Hub Set Screw	W-1641	.02
	Dial Gear	28-7185	.10
	Dial Guard	27-6324	.02
	Thrust Spring	28-5611	.01
	Thrust Washer	28-3876	Per C .30
	"C" Washer	28-3904	.01
	Drive Gear	31-1884	.25
	Vernier Drive	31-1871	.75
	Mask	27-5198	.30
	Mask Arm Assembly	31-1866	.35
	Mask Guide on Lamp Bracket Support	28-7844	.15
	Mask Washer	27-8318	Per C .50
	Dial Screen Assem.	38-7912	.30
	Spring	28-8624	Per C .50
	Lens	27-8310	.02
	Volume Control Shaft	28-6499	.10
	Volume Control Shaft Spring	28-4117	Per C .40
	Retaining Clips	28-8610	.03
	Washer	28-4186	Per C .75
	Socket 8 prong	27-6058	.11
	Socket 7 prong	27-6057	.11
	Tube Shield	28-2726	.10
	Tube Shield Base	28-3808	.03
	I. F. Shield	38-7703	.25
	Terminal Panel I. F. Unit	28-4001	Per C .25
	Washer I. F. Unit	38-6306	.03
	Wiring Panel	38-5864	.02
	Wiring Panel Power Unit	27-4325	.02
	Grommet Mtg. Tuning Condenser	27-4317	.04
	Grommet R. F. Unit	28-2257	.01
	Sleeve Mtg. R. F. Unit	27-8339	Per C .40
	Spacer Mtg. R. F. Unit	W-729	Per C .45
	Screw Mtg. R. F. Unit	28-3927	.01
	Washer Mtg. R. F. Unit	27-7194	.01
	Insulator Mtg. Electrolytic Condenser	6440	.05
	Bracket Mtg. Electrolytic Condenser	38-7714	.15
	Antenna Panel	L-2181	.25
	Speaker Cable	L-2183	.40
	A. C. Cord	27-4330	.10
	Knobs Tuning	27-4326	.10
	Knobs Tuning Vernier	27-4332	.10
	Knobs Wave Switch	28-2917	.10
	Knobs Tone & Volume	28-8023	.02
	Shadowmeter Lamp Shield		
	Shadowmeter Mtg. Spring		
MODEL T CABINET			
	Bezel Frame & Plate Assembly	40-5937	
	Bezel Frame Gasket	27-8311	.01
	Bezel Frame Rubber	5198	
	Bezel Frame Glass	27-8298	.05
	Bezel Frame Ring	28-3987	.35
	Speaker K-38	36-1262	
	Baffle & Silk Assembly	40-5973	
MODEL X CABINET			
	Bezel Frame & Plate Assembly	40-5945	
	Bezel Frame Gasket	27-8312	
	Bezel Frame Rubber	27-8299	
	Bezel Frame Ring	28-3987	
	Speaker H-24	36-1224	
	Baffle and Silk Assembly	40-5972	

Prices Subject to Change Without Notice

Printed in U. S. A.

SERVICE DATA

Model 37-640 is a 7 tube superheterodyne receiver for operation on alternating current, having three tuning ranges, covering standard broadcast and short-wave frequencies. The chassis is constructed in three basic assembly units, concentrating the R. F., I. F. and Audio Output circuits in individual units.

The circuit consists of the "PHILCO FOREIGN TUNING SYSTEM"—controlled by the range switch—providing maximum sensitivity and noise reduction, when used with the **PHILCO HIGH EFFICIENCY AERIAL**. One stage of radio frequency amplification which increases the signal to noise ratio, Automatic Bass Compensation in the volume control circuit, Shadow Tuning, a separate diode circuit for the Automatic Volume Control and a push-pull pentode audio output circuit are also incorporated in this receiver.

Aerial Connections

The Philco High Efficiency Aerial is recommended, for use with this receiver, to obtain maximum performance. A terminal panel is provided at the rear of the chassis for connecting the aerial. This panel contains four screw terminals and a connecting link.

When using the PHILCO HIGH EFFICIENCY AERIAL connect the red and black leads of the Aerial transmission line (lead-in) to terminals 1 and 2 respectively and the ground lead to terminal 3. The connector link should be across terminals 3 and 4.

If a temporary aerial and ground is used shift the connecting link to rest across terminals 2 and 3 and connect the aerial and ground to terminals 1 and 3 respectively.

REMOVING SWITCH AND COIL ASSEMBLIES FROM R. F. UNIT

Remove the center mounting screw on the rear of the R. F. unit. Then lift the rear of the unit and push forward until the rubber mounting grommet, on each side of the unit, clear the mounting slots. The unit is then lifted far enough from the chassis for removal of the two screws holding the selector switch indexing plate and shaft (front of the unit) then pull shaft straight out. Removal of the volume control shaft is also necessary.

IMPORTANT—When selector switch shaft is replaced, care should be taken to have all wafer rotors in the same position so that index projection on the end of shaft will slide freely into notched hole in wafer rotors. **Never** force shaft into rotors.

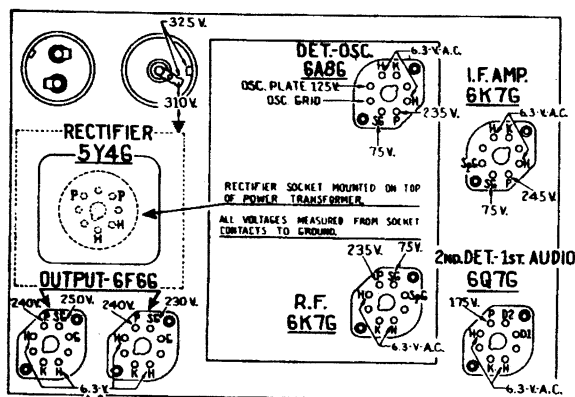


Fig. 1—Socket Voltages
Measured from Underside of Chassis

The voltages indicated by arrows were measured with a Philco 025 Circuit Tester which contains a voltmeter having a resistance of 1000 ohms per volt. Volume Control at minimum, range switch in broadcast position, line voltage 115 A. C.

AERIAL SWITCH AND COIL ASSEMBLY. FIRST SECTION FROM REAR OF UNIT

a. Remove screw holding shield plate to unit base. This screw is located in the right hand corner of shield plate, facing rear underside of chassis.

b. Unsolder the leads connecting the range switch to the aerial panel and I. F. terminal panel; tubular condenser ⑤ to the tuning condenser stator plate and ground lead from assembly shield to unit frame—lift assembly straight out of unit.

R. F. AMPLIFIER ASSEMBLY, CENTER SECTION

a. Remove screw holding shield plate to unit base.

b. Unsolder the leads connecting the range switch to I. F. terminal panel and 6K7G plate socket contact, tubular condenser ⑤ to the tuning condenser housing, selector switch contact (D2) to the tuning condenser stator plates, tubular condenser ④ to shield ground lug and shield to R. F. unit base. The amplifier assembly may then be removed.

OSCILLATOR SWITCH AND COIL ASSEMBLY. THIRD SECTION FROM REAR OF UNIT

a. The oscillator assembly may now be removed by unscrewing the four screws holding shield to R. F. base. These screws are located on each side of the R. F. base.

b. Unsolder the leads connecting range switch to the 6K7G socket contacts and terminal panel in the I. F. unit, condenser ⑦ lead from tuning condenser housing and lead connecting selector switch to the tuning condenser stator plates. Then unsolder wires connecting selector switch to electrolytic condenser ⑩ and 6A8G socket contacts.

Parts are replaced by following the above procedure in the reverse order.

Electrical Specifications

Voltage Rating: 115 A. C.

Frequency Rating: 50 to 60 cycle.

For 25 to 40 cycle operation use Power Transformer marked with asterisk in parts list.

Power Consumption: 80 watts.

Type and Number of Tubes: 2 type 6K7G—R. F. and I. F. Amplifier; 1 type 6A8G—Det. Oscillator; 1 type 6Q7G—2nd Det., 1st Audio, A. V. C.; 2 type 6F6G—Push-pull Output; 1 type 5Y4G—Rectifier.

Undistorted Output: 5 watts.

Intermediate Frequency: 470 K. C.

Tuning Ranges: Three. Range 1—530 to 1720 K. C. Range 2—2.3 to 7.4 M. C. Range 3—7.35 to 22 M. C.

Speakers: K-34 B Cabinet.

H-25 X-MX Cabinet.

POWER TRANSFORMER DATA

Schematic Lead Number	A.C. Volts	Current	Circuit	Color	Resistance
1-2	120	...	Pri.	White	3 ohms
3-4	5.0	2.0A	Fil. Rect.	Blue	.1 ohms
5-7	670	100 MA	High Voltage Ser.	Yellow	70 ohms 75 ohms
6	...	...	Center Top of 5-7	Yellow Green	
8-9	6.7	3.0A	Fil. Tubes	Black	.1 ohm

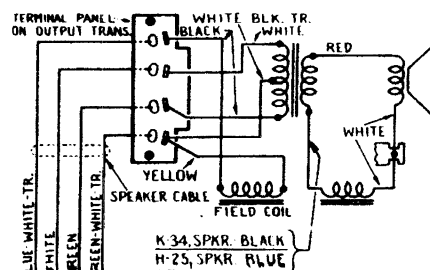
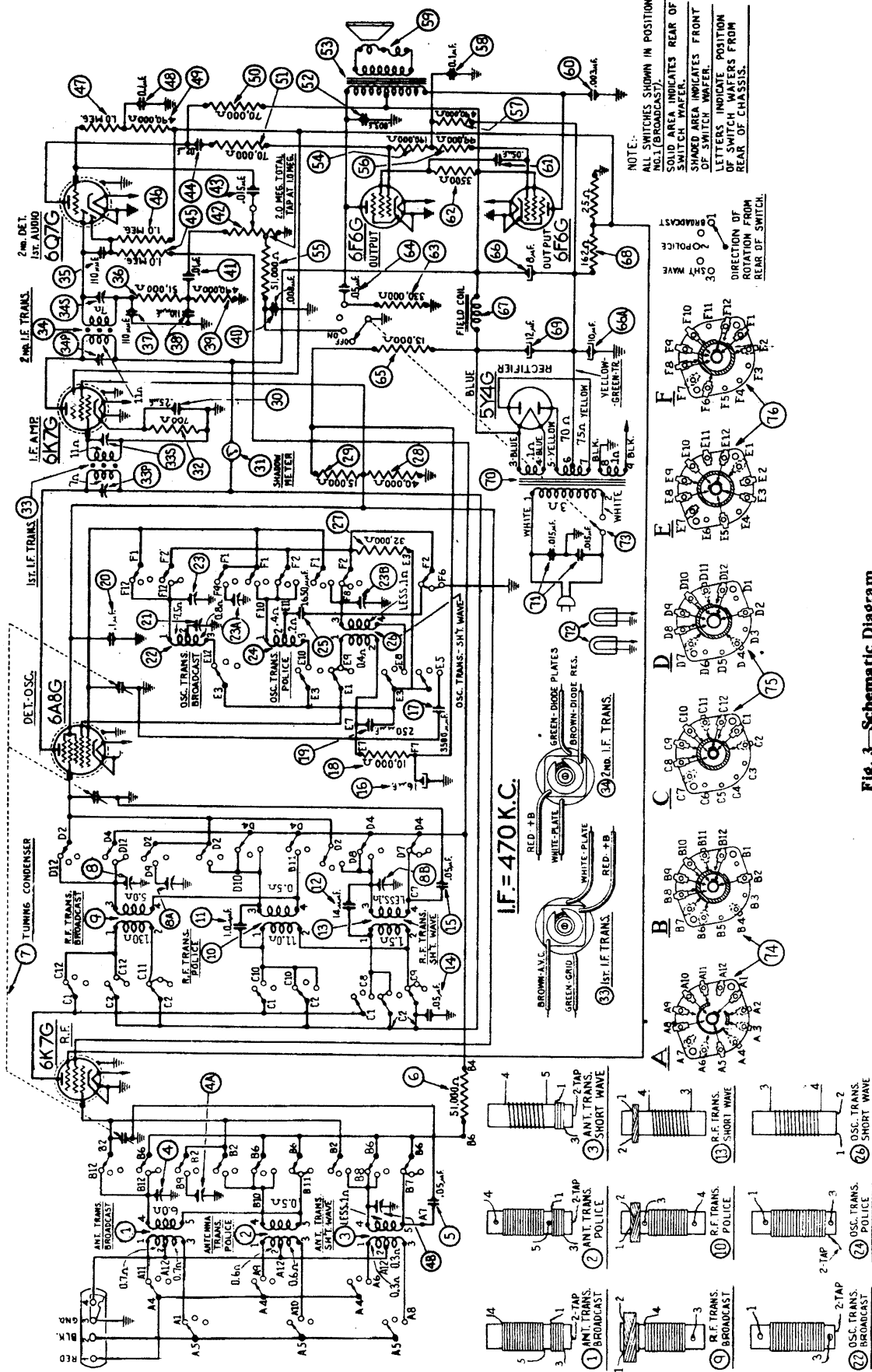


Fig. 2—Speaker Wiring



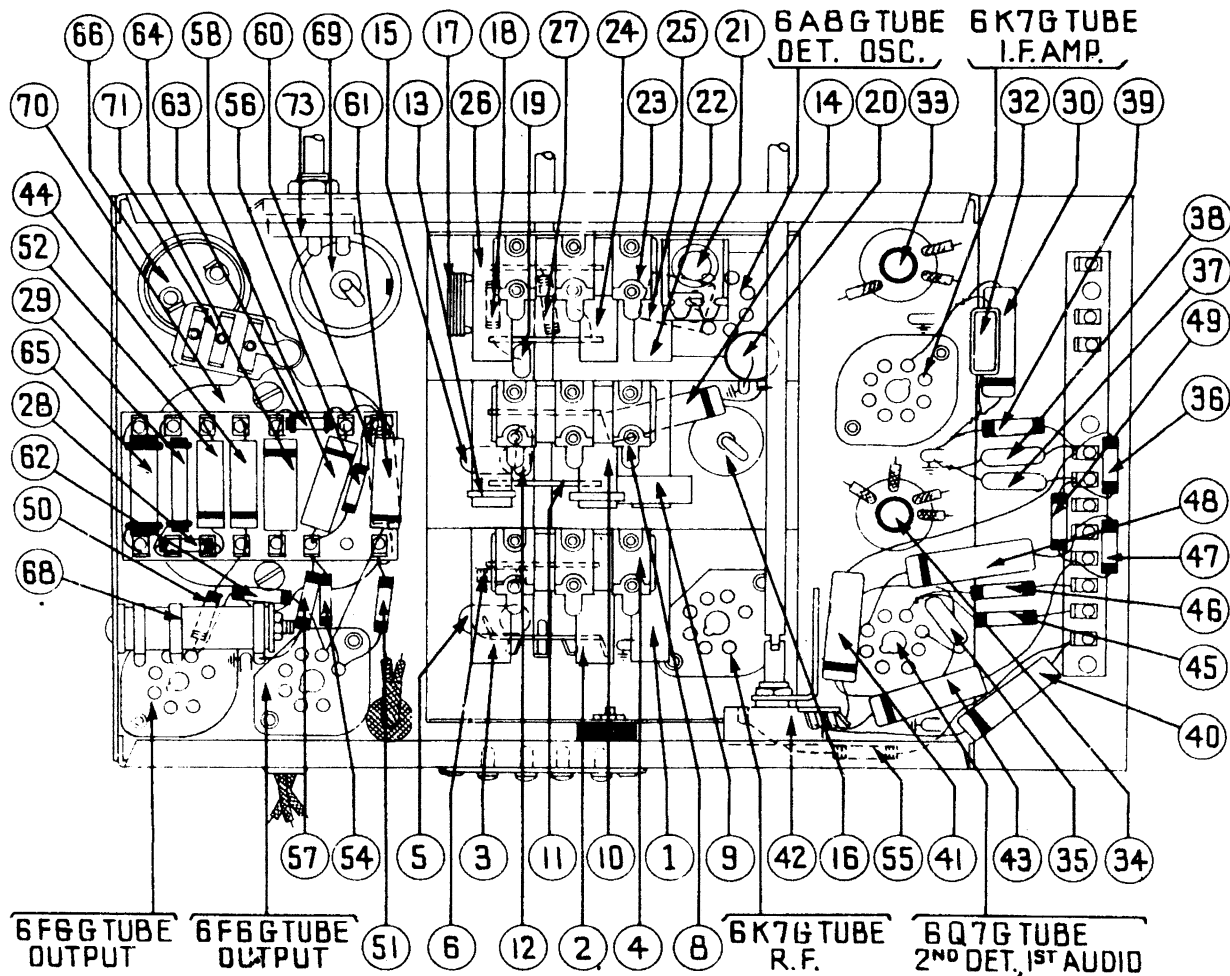


Fig. 4—Base View

Replacement Parts—Model 37-640

Schem. No.	Description	Part No.	List Price	Schem. No.	Description	Part No.	List Price	Schem. No.	Description	Part No.	List Price
1	Antenna Transformer (Broadcast)	32-2108	\$0.80	49	Resistor (490000 ohms ½ watt)	33-449339	\$0.20	38	Indicator Bracket & Lens Assem.	38-7912	\$0.30
2	Antenna Transformer (Police)	32-2119	.65	50	Resistor (70000 ohms ½ watt)	33-370339	.20	28	Spring	28-8624	Per C .50
3	Antenna Transformer (S. W.)	32-2109	.75	51	Resistor (70000 ohms ½ watt)	33-370339	.20	27	Lens	27-8310	.02
4	Compensating Condensers Ant.	31-6092	.60	52	Condenser (.003 mfd. tubular)	30-4042	.20	28	Volume Control Shaft	28-6499	.10
5	Condenser (.05 mfd. tubular)	30-4020	.20	53	Output Transformer B. X. M.X.	32-7634	1.50	28	Volume Control Shaft Spring	28-1117	Per C .40
6	Resistor (51000 ohms ½ watt)	33-351339	.20	54	Resistor (190000 ohms ½ watt)	33-419339	.20	28	Retaining Clips	28-8610	.03
7	Tuning Condenser	31-1820	5.00	55	Resistor (51000 ohms ½ watt)	33-351339	.20	28	Washer	28-1186	Per C .75
8	Compensating Condensers R. F.	31-6092	.60	56	Resistor (99000 ohms ½ watt)	33-399339	.20	44	Washer	4436	Per C 1.50
9	R. F. Transformer (Broadcast)	32-2105	.75	57	Resistor (490000 ohms ½ watt)	33-449339	.20	37	Socket Power Trans.	27-6052	.11
10	R. F. Transformer (Police)	32-2106	.65	58	Condenser (.1 mfd. tubular)	30-4122	.20	37	Socket 8 prong	27-6058	.11
11	Condenser	30-1073	.20	59	Cone & Voice Coil K-34 Speaker	36-3174	.80	37	Socket 7 prong	27-6057	.11
12	Condenser (14 mmfd. mica)	30-1073	.20	60	Cone & Voice Coil H-25 Speaker	02625	1.20	28	Tube Shield	28-2726	.10
13	R. F. Transformer (S. W.)	32-2126	.55	61	Condenser (.003 mfd. tubular)	30-4042	.20	28	Tube Shield Base	28-3898	.03
14	Condenser (.05 mfd. tubular)	30-4123	.20	62	Resistor (3500 ohms ½ watt)	33-235339	.20	38	I. F. Shield	38-7763	.20
15	Condenser (.05 mfd. tubular)	30-4020	.20	63	Resistor (330000 ohms ½ watt)	33-433339	.20	38	Terminal Panel I. F. Unit	38-7703	.25
16	Electrolytic Condenser (16 mfd.)	30-2118	1.65	64	Condenser (.05 mfd. tubular)	30-4454	.25	28	Spacer	28-4001	Per C .25
17	Condenser (3500 mmfd. semi-fixed)	31-6097	.50	65	Resistor (13000 ohms 2 watt)	33-313539	.25	27	Grommet Mtg. Tuning Condenser	27-4325	.02
18	Resistor (10000 ohms ½ watt)	33-310339	.20	66	Electrolytic Condenser	30-2045	1.80	27	Grommet R. F. Unit	27-4317	.04
19	Condenser (.1 mfd. tubular)	30-4170	.25	67	Field Coil Assembly K-34 Speaker	36-3239	3.75	28	Sleeve Mtg. R. F. Unit	28-2257	.01
20	Compensator (Osc. Series Broadcast)	31-6056	.55	68	Field Coil Assembly H-25 Speaker	36-3218	3.50	27	Spacer Mtg. R. F. Unit	27-7807	Per C .50
21	Osc. Transformer (Broadcast)	32-2120	.65	69	Bias Resistor	33-3276	.20	W	Screw Mtg. R. F. Unit	W-729	Per C .45
22	Osc. Transformer (Police)	31-6092	.60	70	Electrolytic Condenser (12 mfd.)	30-2117	1.20	28	Washer Mtg. R. F. Unit	28-3927	.01
23	Compensating Condensers Osc.	32-2121	.40	71	Power Transformer 115 V., 50-60 cycles	32-7597	5.25	27	Insulator Mtg. Electrolytic Condenser	27-7194	.01
24	Osc. Transformer (Police)	31-6092	.60	72	Power Transformer 115 V., 25-40 cycles	32-7598	5.25	64	Bracket Mtg. Electrolytic Condenser	6440	.06
25	Condenser (1650 mmfd. semi-fixed)	31-6096	.40	73	Condenser (.015-.015 mfd. double)	3793-DG	.40	W	Nut Mtg. Volume & Tone Control	W-684	1.25
26	Osc. Transformer (S. W.)	32-2110	.75	74	Pilot Lamp	34-2039	.15	38	Antenna Panel	38-7714	.15
27	Resistor (32000 ohms ½ watt)	33-332339	.20	75	Tone Control & A. C. Switch	42-1182	.75	41	Speaker Cable	41-3201	.40
28	Resistor (40000 ohms ½ watt)	33-340339	.20	76	Ant. Switch	42-1172	1.10	1	A. C. Cord	1-2183	.40
29	Resistor (15000 ohms 1 watt)	33-315439	.20	77	R. F. Range Switch	42-1170	1.00	27	Knob Tuning	27-4330	.10
30	Condenser (.25 mfd. tubular)	30-4446	.20	78	Selector Switch Indexing Plate & Shaft	42-1171	1.00	27	Knob Tuning Vernier	27-4331	.10
31	Shadow meter	45-2189	2.50	79	Pilot Lamp Assembly	42-1172	1.10	27	Knob Wave Switch	27-4326	.10
32	Resistor, 700 ohms, Violet, Black, Brown	33-1220	.20	80	Dial	42-1173	.50	27	Knob Tone & Volume	27-4332	.10
33	1st I. F. Transformer	32-2100	1.50	81	Dial Hub	28-7214	.40	28	Shadow Meter Mtg. Spring	28-8623	Per C .70
34	2nd I. F. Transformer	32-2102	1.50	82	Dial Clamp	28-7187	.12	36	Speaker K-34 B Cabinet	36-1229	7.25
35	Condenser (110 mmfd. mica)	30-1031	.20	83	Set Screw	28-3837	.10	36	Speaker H-25	36-1236	8.25
36	Resistor (51000 ohms ½ watt)	33-351339	.20	84	Dial Guard	W-1641	.02				
37	Condenser (110 mmfd. mica)	30-1031	.20	85	Dial Gear	27-8324	.02				
38	Condenser (110 mmfd. mica)	30-1031	.20	86	Dial Gear	27-8185	.10				
39	Resistor (490000 ohms ½ watt)	33-449339	.20	87	Thrust Spring	28-8611	.01				
40	Condenser (.008 mfd. tubular)	30-4112	.20	88	C Washer	28-3904	.01				
41	Condenser (.01 mfd. tubular)	30-4124	.25	89	Thrust Washer	28-3976	Per C .30				
42	Volume Control	33-5158	1.00	90	Drive Gear	31-1884	.25				
43	Condenser (.015 mfd. tubular)	30-4358	.20	91	Vernier Drive	31-1871	.75				
44	Condenser (.02 mfd. tubular)	30-4113	.20	92	Vernier Drive	27-5198	.30				
45	Resistor (1 megohm ½ watt)	33-510339	.20	93	Mask Arm Assembly	31-1806	.35				
46	Resistor (1 megohm ½ watt)	33-510339	.20	94	Mask Guide Lamp Bracket Support	38-7844	.15				
47	Resistor (1 megohm ½ watt)	33-510339	.20	95	Mask Washer	27-8318	Per C .50				
48	Condenser (.1 mfd. tubular)	30-4122	.20								

Figures in black type indicate circled figures in Base View.

PRICES SUBJECT TO CHANGE WITHOUT NOTICE

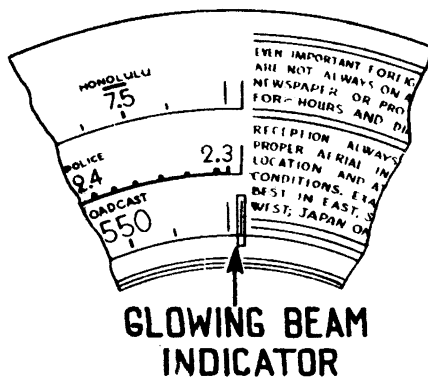


Fig. 5—Dial Calibration

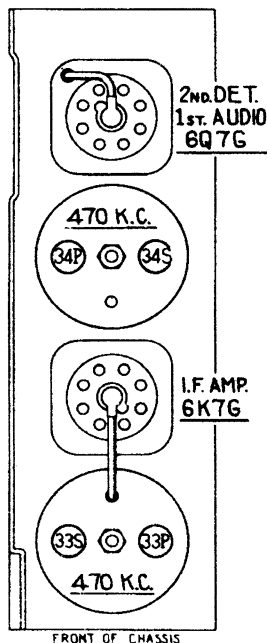


Fig. 6—Location of I. F. Compensators

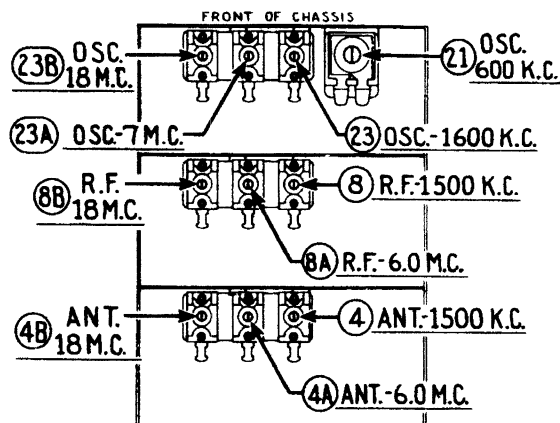


Fig. 7—Locations of R. F. Compensators

Alignment of Compensators

The accurate adjustment of the various compensating condensers is vital to the proper functioning of this receiver. There are four compensating condensers in the I. F. Circuit, four in the Oscillator Circuit, three in the R. F. Amplifier Circuit and three in the Antenna Circuit. Incorrect adjustment will cause loss of sensitivity, unsatisfactory tone, and poor selectivity.

To accurately adjust this receiver, precision test equipment is necessary. A signal generator such as the PHILCO MODEL 088 SIGNAL GENERATOR, covering from 110 to 20,000 K. C. is recommended for adjusting the compensators at the various frequencies specified. A visual indication of the receiver output is also necessary to obtain correct adjustment of the compensators. PHILCO MODEL 025 CIRCUIT TESTER contains a sensitive output meter and is recommended for these adjustments.

Philco Fibre Handle Screw-driver No. 27-7059 completes the necessary equipment for these adjustments. The locations of the various compensators are shown in Figs. 6 and 7.

The following procedure must be observed in adjusting the compensators:

DIAL CALIBRATION—In order to adjust this receiver correctly, the dial must be aligned to track properly with the tuning condenser. To do this, rotate the tuning condenser control to the extreme counter-clockwise position (maximum capacity). Loosen the screw of dial hub, then turn dial until the glowing indicator is centered on the first index line of dial scale (see Fig. 5). Now tighten the dial hub set screw in this position.

SHADOW METER ADJUSTMENT—Remove aerial and allow tubes to warm up. Then adjust shadow meter as follows:

- 1—Move the Shadow meter coil backwards and forwards, until the shadow is within one-eighth of an inch of each side of the screen.
- 2—Remove the Rectifier tube from its socket, and rotate the shadow meter coil for minimum shadow width.
- 3—Replace the Rectifier tube. The shadow should then return to maximum width or within one-eighth of an inch of each side of the screen. If the shadow does not return to maximum width, operations 1 and 2 should be continued until it does.

OUTPUT METER—The 025 Output Meter is connected to the plate and cathode terminals of one (6F6G) tube. Adjust the meter to use the (0-30) Volt Scale.

During the I. F. and R. F. adjustments, the signal generator output should be maintained at the lowest possible level that will give an indication on the output meter.

INTERMEDIATE FREQUENCY CIRCUIT

Frequency 470 K. C.

- 1—Connect the 088 Signal Generator output lead, through a .1 mfd. condenser, to the control grid of the 6A8G tube; and the ground connection of the output lead to the chassis.
- 2—Set the range switch in position No. 1 (Broadcast), then rotate the tuning condenser of the receiver to the maximum capacity position (counter-clockwise), and adjust the signal generator for 470 K. C.
- 3—Adjust compensators 2s 2nd I. F. Sec., 34p 2nd I. F. Pri., 4s 1st I. F. Sec., and 33p 1st I. F. Pri. for maximum reading on output meter.

RADIO FREQUENCY CIRCUIT

Tuning Range—7.3 to 22.0 M. C.

- 1—Remove the signal generator output lead from the grid of 6A8G tube, and connect it through the .1 mfd. condenser to terminal No. 1 on aerial input panel, and the generator ground lead to terminal No. 3, rear of chassis.

(a) Terminals 2 and 3 of aerial input panel must be connected with connector link provided on the panel, during these adjustments.

- 2—Set the tuning range switch in position No. 3 (Short Wave). Turn the signal generator and receiver dials to 18 M. C. and adjust compensators 2b Osc., 3b R. F., and 4b Ant. for maximum output (see note (a) below).

(a) The adjustment of the Radio Frequency compensator on the high frequency range causes a slight detuning of the oscillator circuit. In order to overcome this detuning effect, connect a variable condenser of approximately 350 mmfd., having a good vernier drive, across the oscillator section of the tuning condenser. Leaving the signal generator and receiver dials at 18 M. C., tune the added condenser so that the second harmonic of the receiver oscillator will beat against the signal from the 088 signal generator bringing in the signal. The antenna and R. F. compensator 4b and 3b should then be adjusted to give maximum output. Now remove the external condenser and turn compensator 2b to maximum capacity (clockwise) then without moving signal generator or receiver tuning condenser, back off compensator 2b (counter-clockwise) until a second peak is reached on the output meter. The first peak is caused by tuning to the image frequency signal and must not be used.

Tuning Range—2.3 to 7.4 M. C.

- 1—Turn the range switch to position No. 2 (Police). Rotate the signal generator and receiver dials to 7.0 M. C. Then adjust compensator 2a for maximum output. Now turn the signal generator and receiver dials to 6.0 M. C. and adjust compensators 3a R. F. and 4a Ant. for maximum reading on the output meter.

Tuning Range—530 to 1720 K. C.

- 1—Set the range switch in position No. 1 (Broadcast). Set the 088 Signal Generator indicator at 800 K. C. and the receiver dial at 1600 K. C.

(a) In adjusting the receiver at 1600 K. C. the second harmonic of 800 K. C. to which the signal generator is tuned, is used. The second harmonic of 800 K. C. is 1600 K. C. Now adjust compensators 2s Osc., 3s R. F. and 4s Ant. for maximum reading on output meter.

- 2—The low frequency end of the range is now tuned by turning the signal generator and receiver dials to 600 K. C. and adjusting compensator 2s Osc. series (see Note (a) below) for maximum reading on output meter.

(a) While compensator 2s is being adjusted, the tuning condenser must be rolled for maximum output. This is accomplished as follows: First tune compensator 2s for maximum output. Then vary the tuning condenser for maximum output at 600 K. C. Now retune compensator 2s and again vary the tuning condenser back and forth at 600 K. C. for maximum output. This operation of first turning the compensator then the tuning condenser is continued until maximum output is obtained at the 600 K. C. frequency.

- 3—After the low frequency (600 K. C.) end of the range is adjusted, the 1600 K. C. end is readjusted, as given in Paragraph (1) above, to correct any variation that the low frequency series compensator may have caused in the alignment of the high frequency end.

- 4—Now turn the signal generator and receiver dials to 1500 K. C. and readjust compensators 3s Ant. and 4s R. F. for maximum output.

NEW PROFITABLE BUSINESS
for ALL SERVICEMEN



PHILCO
Noise-Elimination
Kit
Part No. 45-
List Price \$15.00

Electrical Specifications

TYPE CIRCUIT: Superheterodyne; battery operated; with Class "B" output circuit; the Philco Automatic Aerial Tuning System, and built-in connection for the Philco High-Efficiency Aerial.

BATTERY REQUIRED: "A" Philco 172-R, storage battery or a dry "A" battery Philco Part No. 41-8011. If a dry "A" battery is used, a ballast lamp Philco type 1Z1 must be inserted in the socket provided in the dry "A" battery. This lamp acts as a voltage regulator and maintains a constant potential of two volts on the filament of the receiver tubes.

"BC" battery—Philco Part No. 41-8007 is used to supply B and C voltages. This battery contains a socket into which the receiver battery cable plug is inserted.

CURRENT DRAIN:

"A" battery 0.9 amps
"B" battery 23 M.A.

PHILCO TUBES USED: Seven: 2—1D5G; 1—1C7G; 2—1H4G; 1—1E5G; 1—1J6G.

FREQUENCY RANGES: Four:

Range 1—530 to 1600 K. C.
Range 2—1.58 to 4.8 M. C.
Range 3—4.7 to 11.6 M. C.
Range 4—11.5 to 18.2 M. C.

INTERMEDIATE FREQUENCY: 470 K. C.

SPEAKER:

"B" KR-17
"X" HR-12

Shadow Meter Adjustment

With receiver turned ON, remove aerial lead and adjust the shadow meter as follows:

1. Move the shadow meter coil backwards and forwards, until the opposite edges of the shadow are $\frac{1}{8}$ of an inch from each end of the shadow screen, measuring along the bottom edge of the screen. Adjustment of the shadow meter light bracket may be necessary for perfect centering.

2. Remove the "B" Battery plug from its socket and rotate coil until shadow reaches minimum width. This width must not exceed $\frac{3}{32}$ of an inch.

3. Replace the "B" Battery plug in its socket. The shadow should then widen until it is not more than $\frac{3}{16}$ inch or less than $\frac{1}{16}$ inch from each side of the screen, measuring along the bottom edge. If these limits are not obtained readjust the shadow meter as given in paragraphs 1 and 2 until they are obtained.

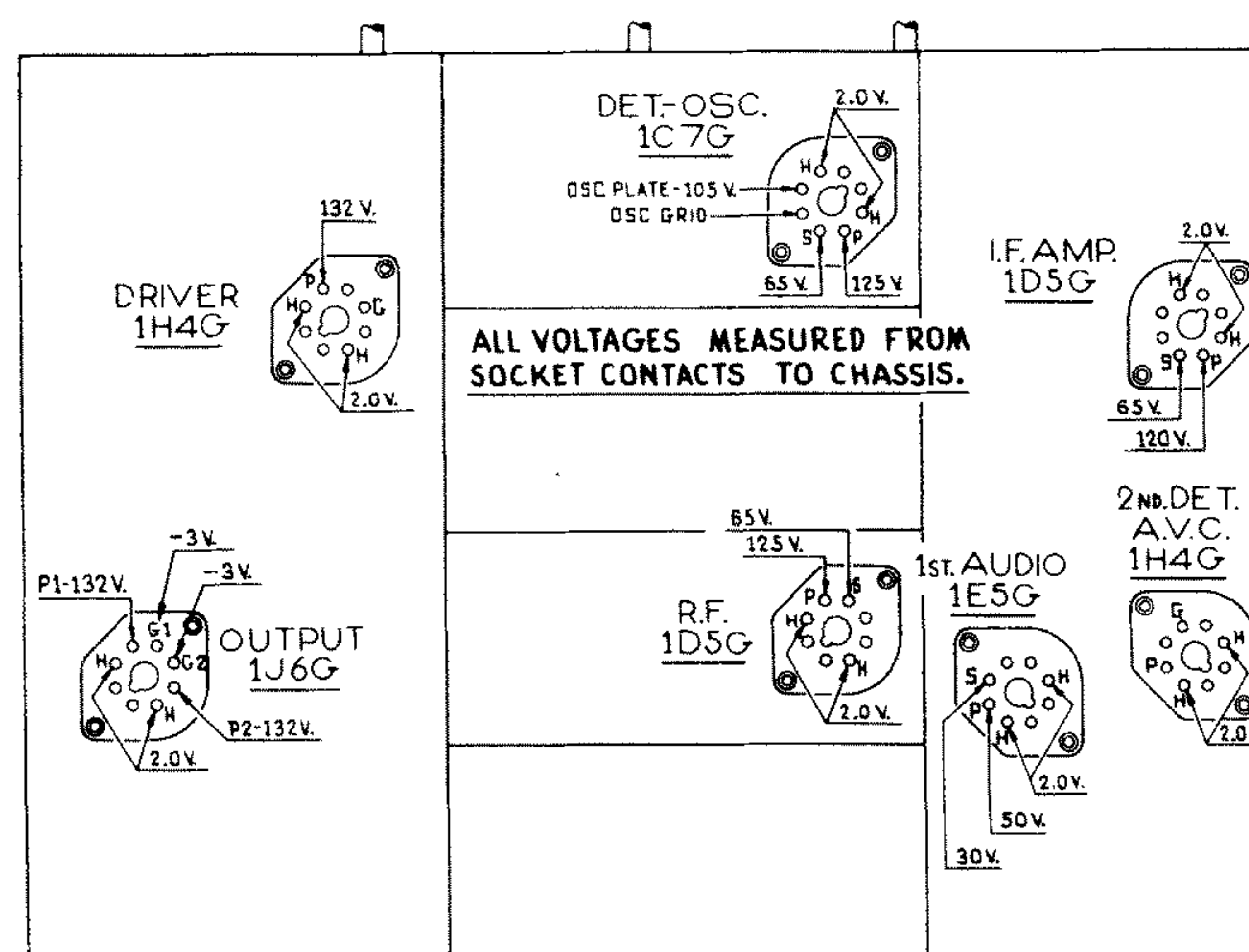


Fig. 1. Socket Voltages and R. F. Compensators

The voltages indicated by arrows were measured with a Philco 025 Circuit Tester which contains a voltmeter having a resistance of 1000 ohms per volt. Volume control at minimum; Range Switch in broadcast position; Storage Battery fully charged.

Aerial Connections

The red and black leads of the High Efficiency Aerial "transmission line" are connected to terminals 1 and 2 respectively, of the terminal panel provided on the rear of the chassis. Connect the jumper on the terminal panel across terminals 3 and 4.

If a temporary aerial is used, the jumper should be across terminals 2 and 3. The aerial connects to terminal 1 and the ground lead to terminal 3. A good ground connection is desirable in all installations.

Dial Calibration

In order to adjust this receiver correctly, the dial must be aligned to track properly with the tuning condenser. To do this rotate the tuning control to the extreme counter-clockwise position (maximum capacity). Loosen the set screw of the dial hub, then turn dial until the glowing indicator is centered on second index line of dial scale (see Fig. 2). Now tighten the dial hub set screw in this position.

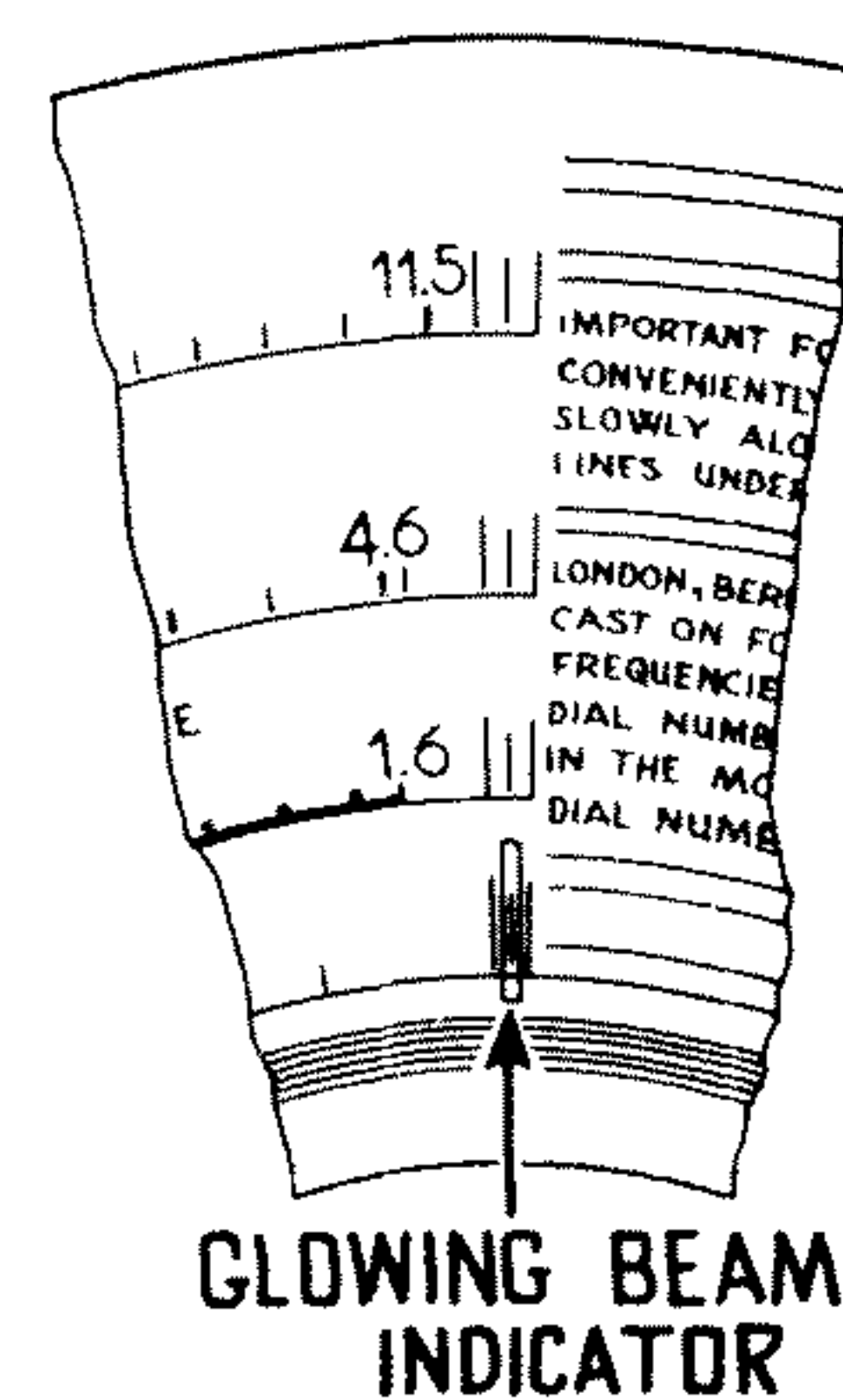
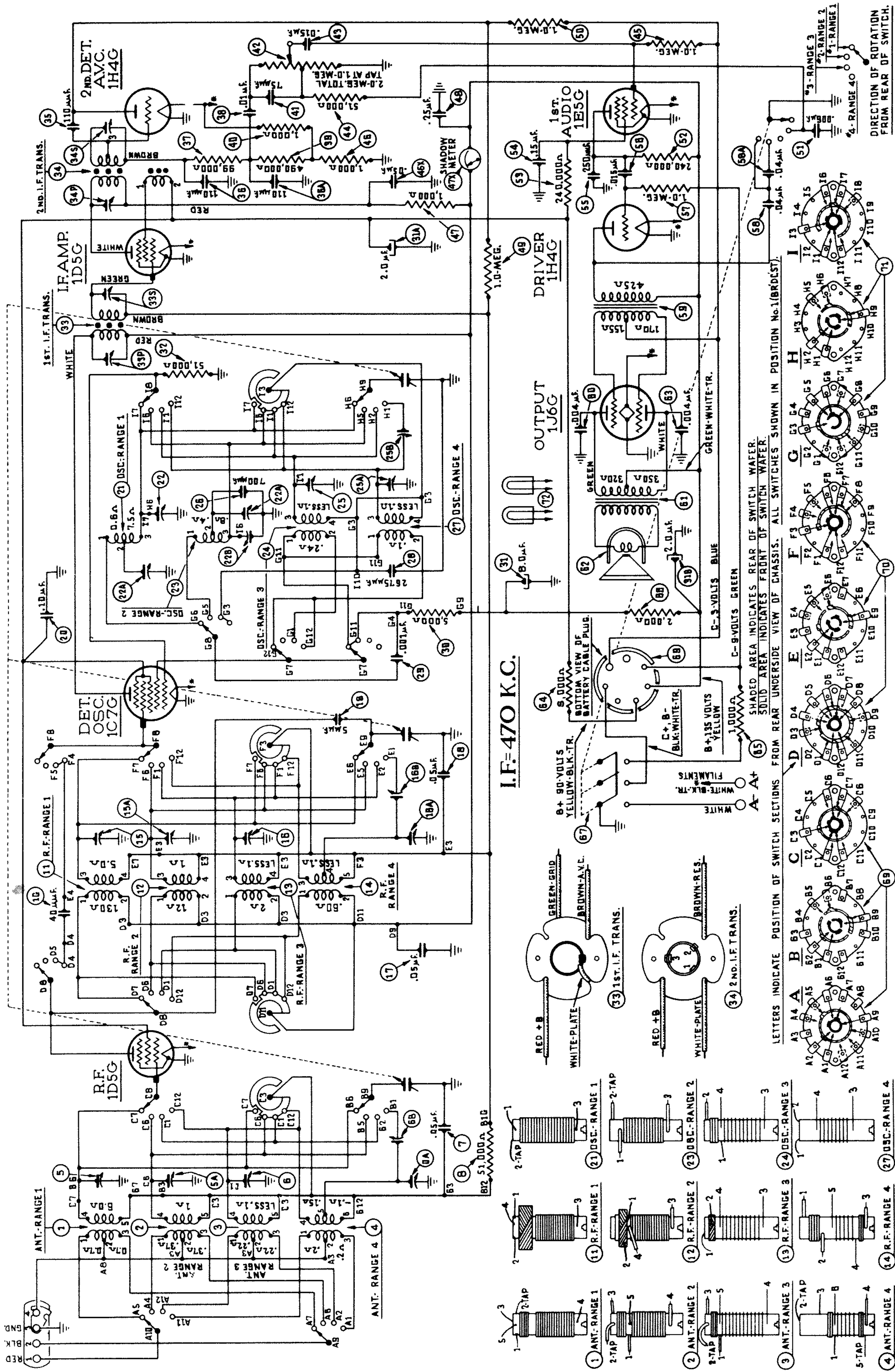


Fig. 2 -- Dial



Model 37-643

Fig. 3. Schematic Diagram

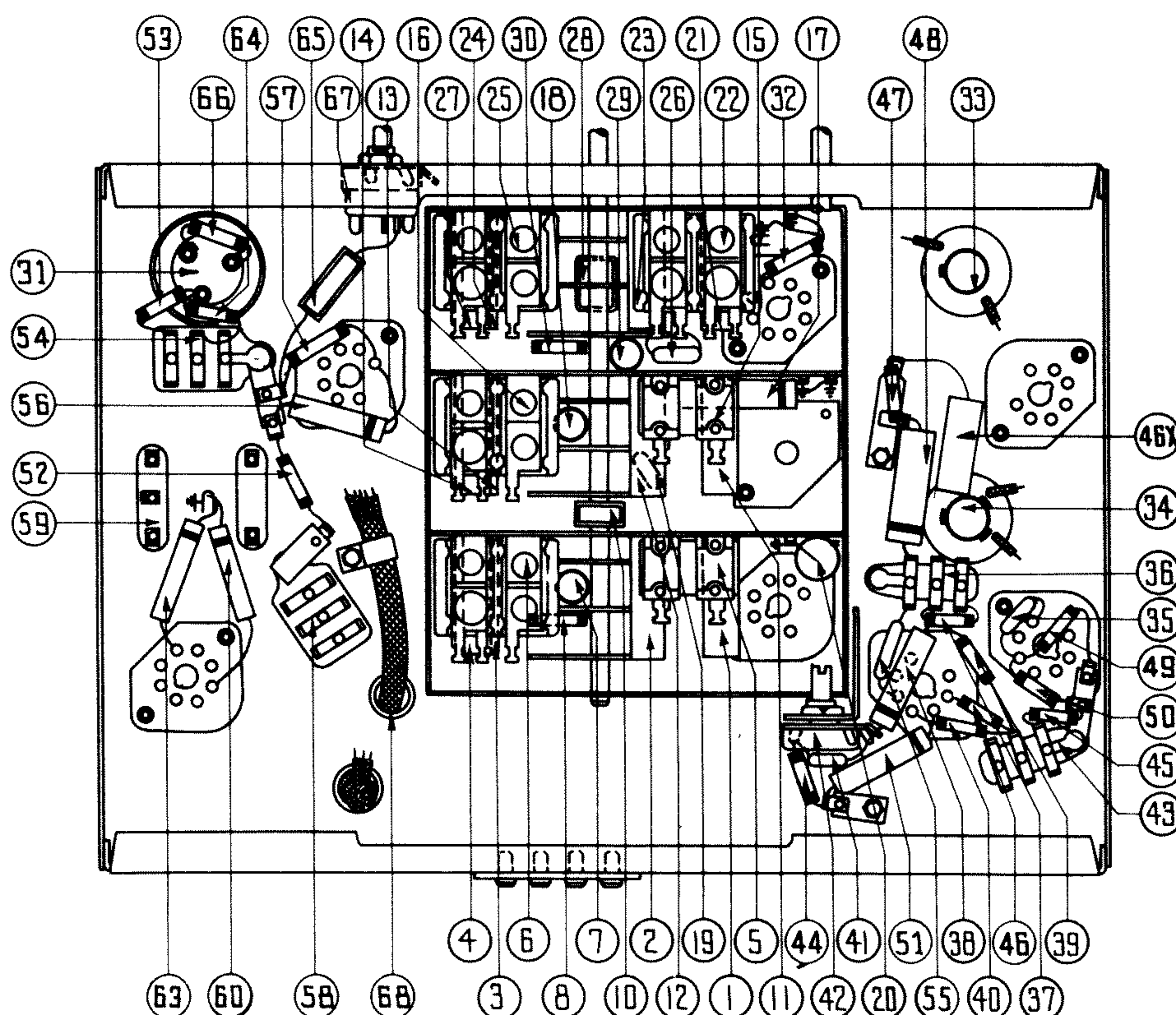


Fig. 4. Base View of Chassis

Replacement Parts—Model 37-643

Schem. No.	Description	Part No.	List Price	Schem. No.	Description	Part No.	List Price	Schem. No.	Description	Part No.	List Price
1	Antenna Transformer (Range 1)	32-2108	\$1.60	47	Resistor (1,000 ohms, 1/2 watt)	33-210339	\$0.20		Volume Control Shaft	38-8060	\$0.12
2	Antenna Transformer (Range 2)	32-2146	1.20	47X	Shadow Meter	45-2307			Retaining Clip	28-4394	.01
3	Antenna Transformer (Range 3)	32-2150	1.20	48	Condenser (.25 mfd. tubular)	30-4446	.25		Spring	28-4117	.40 C
4	Antenna Transformer (Range 4)	32-2175	1.20	49	Resistor (1 megohm, 1/2 watt)	33-510339	.20		Tube Shield	28-2726	.10
5	Compensator (two section)	31-6093	.40	50	Resistor (1 megohm, 1/2 watt)	33-510339	.20		Tube Shield Base	28-3898	.03
6	Compensator (three section)	31-6128	1.00	51	Condenser (.006 mfd. tubular)	30-4125	.20		Shield Shadow Meter	28-2917	.02
7	Condenser (.05 mfd. tubular)	30-4020	.20	52	Resistor (240,000 ohms, 1/2 watt)	33-424339	.20		Socket (7 prong)	27-6057	.11
8	Resistor (51,000 ohms, 1/2 watt)	33-351339	.20	53	Resistor (240,000 ohms, 1/2 watt)	33-424339	.20		Socket (8 prong)	27-6058	.11
9	Tuning Condenser	31-1855	4.50	54	Condenser (.15 mfd. tubular)	6287-SG	.20		Grommet Mtg. R. F. Unit	27-4317	.04
10	Condenser (40 mmfd. mica)	30-1076	.20	55	Condenser (250 mmfd. mica)	30-1032	.25		Sleeve Mtg. R. F. Unit	28-2257	.01
11	R. F. Transformer (Range 1)	32-2105	1.00	56	Condenser (.015 mfd. tubular)	30-4226	.20		Washer Mtg. R. F. Unit	27-7807	.50 C
12	R. F. Transformer (Range 2)	32-2147	.70	57	Resistor (1 megohm, 1/2 watt)	33-610339	.20		Screw Mtg. R. F. Unit	W-729	.45 C
13	R. F. Transformer (Range 3)	32-2151	.70	58	Condenser (.04 mfd. dual bakelite)	8327-DU	.40		Mtg. Rubber (Gang Condenser)	27-4325	.02
14	R. F. Transformer (Range 4)	32-2176	1.20	56	Audio Transformer (Input)	32-7637	2.00		Mtg. Spring (Shadow Meter)	28-8623	.70 C
15	Compensator (two section)	31-6120	.50	60	Condenser (.004 mfd. tubular)	30-4456	.20		Mtg. Plate (R. F. Transformer)	28-3808	.02
16	Compensator (three section)	31-6127	1.00	61	Output Transformer KR-17-HR-12	32-7639	1.60		Mtg. Spacer (R. F. Transformer)	27-8228	.01
17	Condenser (.05 mfd. tubular)	30-4020	.20	62	Cone and Voice Coil KR-17	36-3540	.80		Mtg. Screw (R. F. Transformer)	W-1635	.30 C
18	Condenser (.05 mfd. tubular)	30-4020	.20		Cone and Voice Coil HR-12	36-3557	1.20		Mtg. Busher (Cabinet)	27-4360	.04
19	Condenser (5 mmfd. mica)	30-1077	.20	63	Condenser (.004 mfd. tubular)	30-4456	.20		Mtg. Rubber (Cabinet)	3558	.03
20	Condenser (.1 mfd. tubular)	30-4122	.20	64	Resistor (8,000 ohms, 1/2 watt)	33-280339	.20		Speaker Cable	41-3207	.30
21	Oscillator Transformer (Range 1)	32-2120	1.00	65	Resistor (1,000 ohms, 1/2 watt)	33-1223	.20		Knob (Tuning)	27-4330	.10
22	Compensator (four section)	32-6108		65	Resistor (2,000 ohms, 1/2 watt)	33-220339	.20		Knob (Tuning Vernier)	27-4331	.10
23	Oscillator Transformer (Range 2)	32-2149	.70	67	Switch and Tone Control	42-1241	1.00		Knob (Tone and Volume)	27-4332	.10
24	Oscillator Transformer (Range 3)	32-2152	.70	68	Battery Cable Assembly	41-3198	1.40		Knob (Range Switch)	27-4326	.10
25	Compensator (three section)	32-6128		69	Ant. Range Switch	42-1202			"A" Battery	172-R	
26	Condenser (650 mmfd. mica)	5863	.25	70	R. F. Range Switch	42-1254			"B" Battery	41-8007	
27	Oscillator Transformer (Range 4)	32-2182	.70	71	Oscillator Range Switch	42-1204					
28	Condenser (2675 mmfd.)	30-1085	.40	72	Pilot Lamp (dial) and Shadow Meter	34-2150	.22				
29	Condenser (.001 mmd. tubular)	30-4453	.20		Shadow Meter Receptacle Assem.	41-3225					
30	Resistor (5,000 ohms, 1/2 watt)	33-250339	.20		Range Switch Shaft and Index Plate	42-1186	.50		Speaker KR-17	36-1248	
31	Electrolytic Condenser (8, 2, 2 mfd.)	30-2161	1.60		Pilot Lamp Assembly	38-7875	.45		Baffle and Silk Assembly	40-5975	.40
32	Resistor (51,000 ohms, 1/2 watt)	33-351339	.20		Dial	27-5250	.70		Bezel Assembly	40-5946	.75
33	1st I. F. Transformer	32-2253	1.80		Hub	28-7187	.12		Gasket	27-8312	.01
34	2nd I. F. Transformer	32-2255	1.80		Clamp	28-2837	.10		Screw	W-1644	.50 C
35	Condenser (110 mmfd. mica) 80 mmf.	30-1031	.20		Set Screw	W-1641	.02		Glass	27-8299	.06
35	Condenser (110 mmfd. dual)	8035-DG	.25		Dial Hole Cover	27-8425	.02		Ring	28-3987	.40
37	Resistor (99,000 ohms, 1/2 watt)	33-399339	.20		Gear (Dial)	28-7185	.10				
38	Condenser (.01 mfd. tubular)	30-4124	.20		Gear (Drive)	31-1884	.25				
38	Resistor (490,000 ohms, 1/2 watt)	33-449339	.20		Thrust Spring	28-8611	.01				
40	Resistor (1,000 ohms, 1/2 watt)	33-210339	.20		Thrust Washer	28-3976	.30 C				
41	Condenser (75 mmfd. mica)	30-1053			"C" Washer	28-3904	.01				
42	Volume Control	33-5158	1.00		Mask	27-6240	.30				
43	Condenser (.015 mfd. bakelite)	3793-SU	.35		Mask Arm and Link Assembly	31-1959	.30		Baffle Silk Assembly	40-6036	1.20
44	Resistor (51,000 ohms, 1/2 watt)	33-351339	.20		Mask Washer	27-8318	.50 C		Speaker HR-12	36-1250	11.00
45	Resistor (1 megohm, 1/2 watt)	33-510339	.20		Mask Guide and Lamp Bracket	38-7844	.15		Bezel and Plate Assembly	40-5948	.80
45	Resistor (1000 ohms, 1/2 watt)	33-210339	.20		Indicator Bracket and Lens Assembly	31-1900	.30		Glass	27-8300	.06
45X	Condenser (.05 mfd. tubular)	30-4020			Scale Guard	27-8324	.02		Ring	28-3988	.45
									Gasket	27-8313	.01
									Screw	W-1644	.50 C

Prices Subject to Change Without Notice

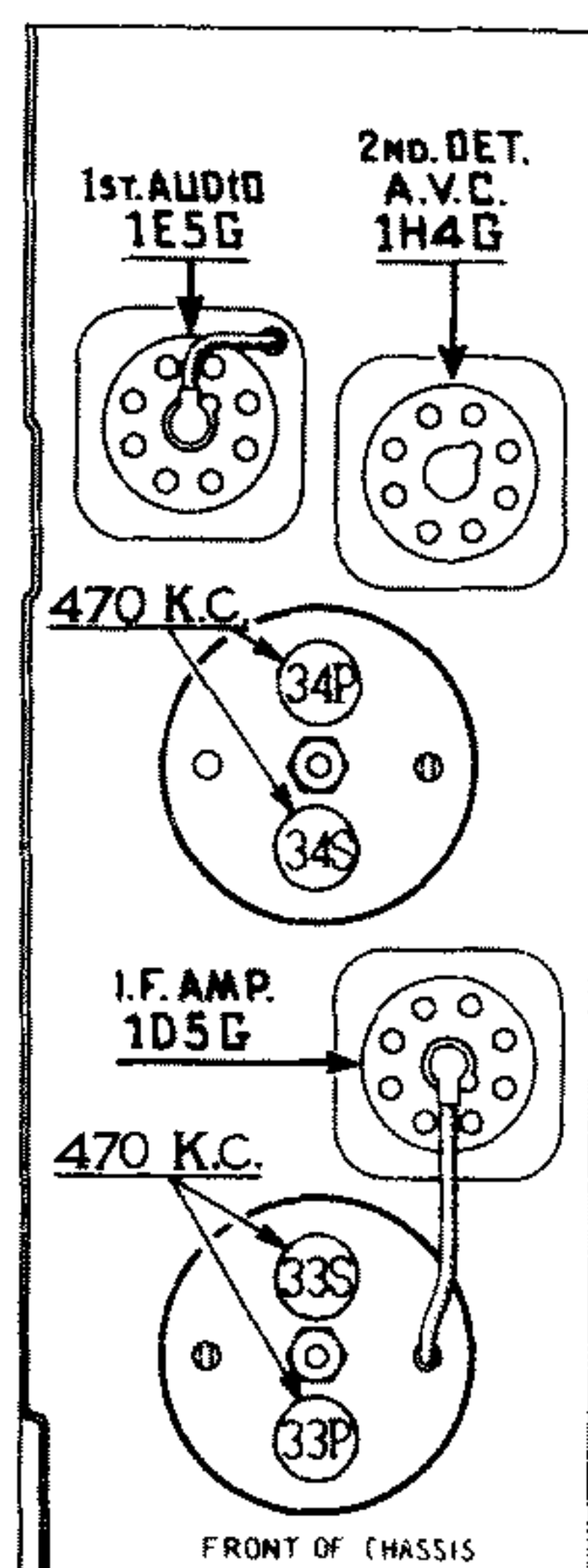


Fig. 5 I. F. Compensators

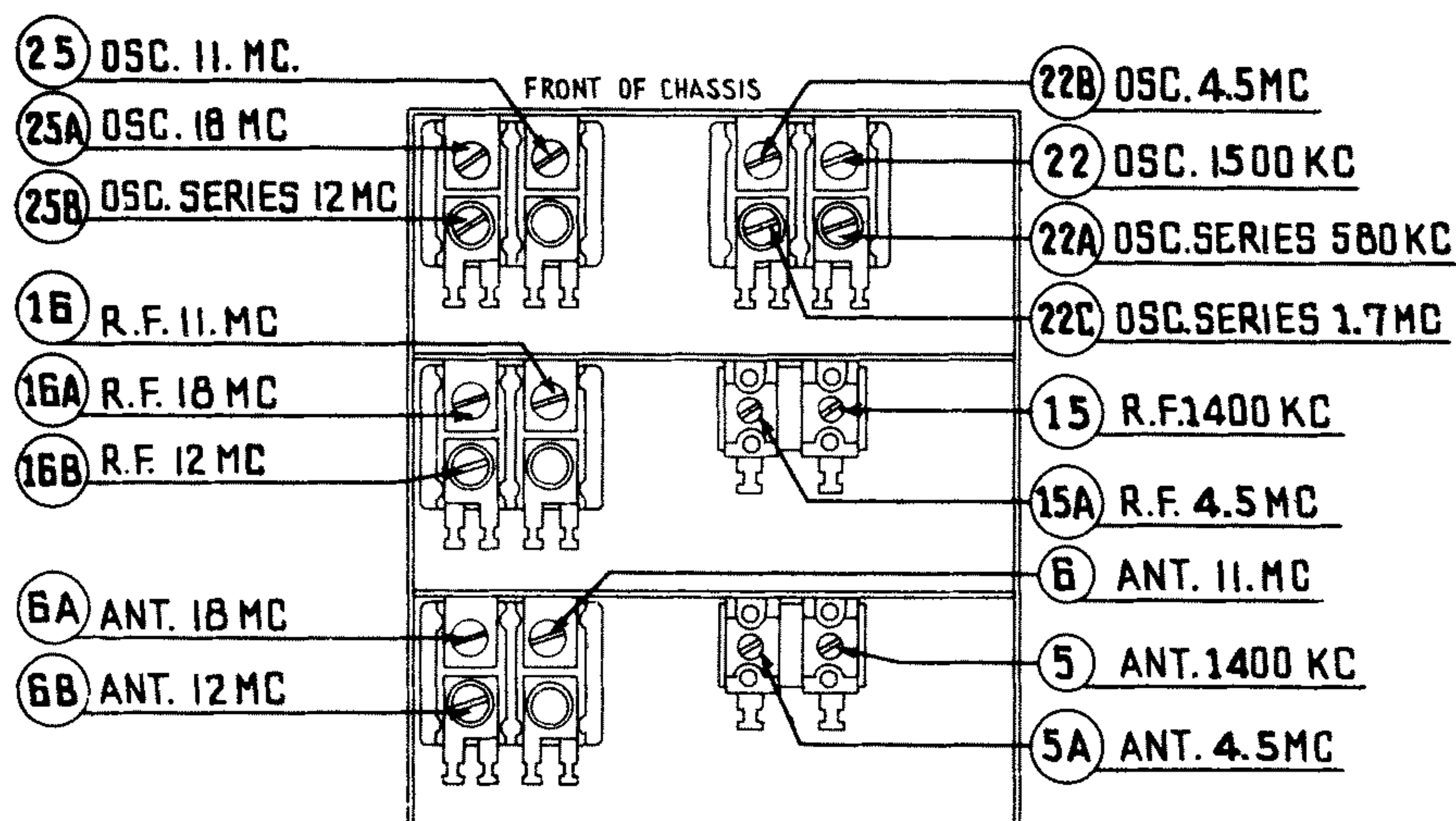


Fig. 6 R. F. Compensators

Alignment of Compensators

EQUIPMENT REQUIRED: (1) Signal Generator; Philco Model 088 (fundamental frequency 110 to 20,000 K. C.) is the correct instrument for this purpose; (2) output meter. Philco Model 025 Circuit Tester incorporates a sensitive output meter and is recommended; (3) Fibre handle screw driver (Philco Part No. 27-7059); (4) Special variable condenser (Philco Part No. 45-2325).

OUTPUT METER: The 025 Output Meter is connected between the plate prong of the 1H4G Driver tube and the chassis. Then adjust the meter to use the (0-30) volt scale.

INTERMEDIATE FREQUENCY CIRCUIT

Set controls as follows:

- Range switch position one (broadcast)
- Volume control maximum
- Connect the 088 Signal Generator output lead through a .1 mfd. condenser to the control grid of the 1C7G tube, and the ground connection of the output lead to the chassis.
- Receiver dial at 580 K. C.
- Signal Generator 470 K. C.
- Adjust compensators (34S), (34P), (33S), and (33P) for maximum output.

RADIO FREQUENCY CIRCUIT

Tuning Range 11.5 to 18.2 M. C.

- Connect signal generator output lead with the .1 mfd. series condenser to terminal No. 1 and the ground lead to terminal No. 3. Terminals 2 and 3 must be connected with the shorting link provided on the aerial panel.

- Adjust compensators as follows:

Range Switch	Signal Generator	Receiver Dial	Compensators In Order
4	18.0 M. C.	18.0 M. C.	(25A) check image at 17.06 M. C. on receiver dial (See Note B)
4	18.0 M. C.	18.0 M. C.	(6A), (16A) use shunt condenser on 25A. First lug from left side of R. F. Unit fig. 6. (See Note A)
4	12.0 M. C.	12.0 M. C.	(25B), (16B), (6B)
4	18.0 M. C.	18.0 M. C.	(25A)
4	18.0 M. C.	18.0 M. C.	(6A), (16A) use shunt condenser on (25A). First lug from left side of R. F. Unit fig. 6. See Note (A)

Tuning Range 7.35 to 11.6 M. C.

Range Switch	Signal Generator	Receiver Dial	Compensators In Order
3	11.0 M. C.	11.0 M. C.	(25) check image 10.06 M. C. on receiver
3	11.0 M. C.	11.0 M. C.	(16), (6) use shunt on (25). Third lug from left side of R. F. Unit fig. 6. (See Note A)
3	11.0 M. C.	11.0 M. C.	(25)

Tuning Range 4.7 to 7.4 M. C.

Range Switch	Signal Generator	Receiver Dial	Compensators In Order
2	4.5 M. C.	4.5 M. C.	(22B), (15A), (5A)
2	1.7 M. C.	1.7 M. C.	(22C)
2	4.5 M. C.	4.5 M. C.	(22B), (15A), (5A)

Tuning Range 530 to 1600 K. C.

Range Switch	Signal Generator	Receiver Dial	Compensators In Order
1	1500 K. C.	1500 K. C.	(22), (15), (5)
1	580 K. C.	580 K. C.	(22A) roll tuning condenser
1	1500 K. C.	1500 K. C.	(22)
1	1400 K. C.	1400 K. C.	(15), (5)

NOTE "A"—To eliminate the effect of the Ant. and R. F. compensators detuning the Osc. circuit, a variable tuning condenser, Philco Part No. 45-2325 is connected from the oscillator compensators to ground when designated in the padding instruction above. Tune the added condenser from the minimum capacity position until the second harmonic of the receiver oscillator beats against the signal from the generator, resulting in a maximum indication on the output meter. Then adjust compensators as noted for maximum output.

NOTE "B"—To accurately adjust the compensator to the fundamental and not the image signal, turn the oscillator compensator to the maximum capacity position clockwise. Then slowly turn the compensators counter-clockwise until a second maximum peak is obtained on the output meter. The first peak is the image signal and the receiver must not be adjusted to it. If the above procedure is correctly performed, the image signal will be found 940 K. C. below the frequency being used on any high frequency band.

PHILCO RADIO AND TELEVISION CORPORATION
Philadelphia, Pa.

SERVICE DATA

DESCRIPTION

Model 37-650 is an 8 tube superheterodyne receiver for operation on alternating current. It has three tuning ranges, covering standard broadcast and short-wave frequencies. The chassis is constructed in four basic assembly units, concentrating the R. F., I. F., Audio and Power Circuits in individual units.

The circuit includes the **Philco Foreign Tuning System**—controlled by the range switch—providing maximum sensitivity and noise reduction, when used with the **Philco High Efficiency Aerial**; one stage of radio frequency amplification before the Detector-Oscillator tube; Automatic Bass Compensation in the Volume Control Circuit; Shadow Tuning; Automatic Volume Control, and a Push-Pull Pentode Output Circuit.

AERIAL CONNECTIONS

The red and black leads of the High-Efficiency Aerial "transmission line" are connected to terminals 1 and 2 respectively, of the terminal panel provided at the rear of the chassis. Connect the jumper on the terminal panel across terminals 3 and 4.

If a temporary aerial is used, the jumper should be across terminals 2 and 3. The aerial connects to terminal 1 and the ground lead to terminal 3. A good ground connection is desirable in all installations.

REPLACING DIAL

To replace the dial, remove the clamp holding the dial to the hub by turning clamp counter-clockwise, using the two holes provided on the clamp for this purpose.

REMOVING MASK ARM & LINK ASSEMBLY

First remove dial, then loosen set screw of dial hub and remove the hub and felt washer from the shaft. Now loosen screws holding indicator bracket and lens assembly, and move bracket forward about $\frac{1}{2}$ inch. The assembly may now be removed by loosening set screw of range switch arm, then pull arm off of range switch shaft.

REMOVING SWITCH & COIL ASSEMBLIES OF R. F. UNIT

To replace any part in the switch and coil assemblies of the R. F. Unit, each assembly can be removed separately as follows:

First remove the tuning dial, mask and arm assembly. Remove the center mounting screw on the rear of the R. F. Unit. Then lift the rear of the unit and push forward until the rubber mounting grommets, on each side of the unit, clear the mounting slots. The unit is then lifted far enough from the chassis for removal of the two screws holding the selector switch indexing plate and shaft (front of unit). Then pull shaft straight out from the unit. Also, remove the volume control shaft by releasing the retaining clip, inside the chassis, from the shaft.

IMPORTANT—When selector switch shaft is replaced, care should be taken to have all wafer rotors in the same position, so that the key on the switch shaft will slide freely into the notched hole in each wafer rotor. NEVER force shaft into rotors.

Servicing Stages—It is necessary to unsolder some connecting leads in order to release the stage for servicing. If all the following connections are unfastened the stage will be entirely released. Ordinarily only one or two leads need be loosened in order to change coils, replace coupling condensers, or replace switch sections.

Antenna Stage Assembly—Rear Section of Unit

A. Remove screw holding shield plate to the unit base. This screw is located in the right hand corner of the shield plate, facing rear underside of the chassis.

B. Unsolder the wires at the I. F. and Aerial terminal panels which connect to the range switch, also wires from tuning condenser housing to tubular condenser (6); tuning condenser stator plate to selector switch contact (B3), and ground lead from assembly shield to unit frame. After disconnecting these wires assembly may be removed.

R. F. Stage Assembly—Middle Section

A. Remove screw (right side of assembly) holding shield plate to unit base.

B. Unsolder the two wires connecting the I. F. Unit to range switch contacts (C3) and (D12); also wires connecting tuning condenser housing to tubular condenser (13) and stator plates to selector

switch contact (D3); selector switch contact (D2) to the grid of the 6A8G tube, and ground lead from shield to unit frame. Remove assembly from the unit.

Oscillator Stage Assembly—Front Section

A. The oscillator assembly may be removed by unscrewing the four screws holding shield to R. F. base. These screws are located on each side of the R. F. Unit.

B. Unsolder the wires connecting range switch contacts (E2) and (F2) to the 6A8G socket; tuning condenser stator plates to range switch contact (F3); mica condenser (19) to the tuning condenser housing; range switch to resistor (40) and (61), and ground lead to I. F. Unit. With these leads disconnect unit may be removed.

Replace the units by following the above procedure in the reverse order.

Electrical Specifications

Power Supply:	Voltage	Frequency Cycles	Consumption
	115	50-60	110 watts
	115	25-40	110 watts

Intermediate Frequency: 470 K. C.

Output: Undistorted 7 watts.

Philco Tubes: 6K7G—R. F. Amplifier; 6A8G—Oscillator and first detector; 6K7G—I. F. Amplifier; 6J5G—2nd Detector, A. V. C.; 6K5G—1st Audio; 2-6F6G—Output; 5Y4G—Rectifier.

Tuning Ranges: Range 1—530 to 1720 K. C.; Range 2—5.7 to 11.6 M. C.; Range 3—11.5 to 18.2 M. C.

Speakers: X Cabinet—H-26; B Cabinet—K-35.

POWER TRANSFORMER DATA

Schematic Lead No.	A. C. Volts	Current	Circuit	Color	Resistance
1-2	120	—	Pri.	White	2.0 ohm
3-4	5.	2.0A	Rect. Fil.	Blue	Less than 0.1 ohm
5-7	700	135 MA	High Volt. Sec.	Yellow	55 ohms 60 ohms
6	—	—	Center Tap 5-7	Yellow Green tr.	—
8-9	6.7	3.3 A	Fil.	Black	Less than 0.1 ohm

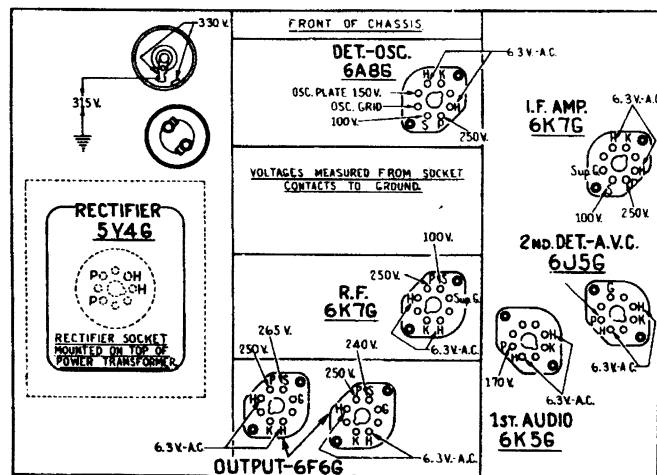


Fig. 1—Socket Voltages—Underside of Chassis View

The voltages indicated by arrows were measured with a **Philco 025 Circuit Tester** which contains a voltmeter having a resistance of 1000 ohms per volt. Volume Control at minimum, range switch in broadcast position, line voltage 115 A. C.



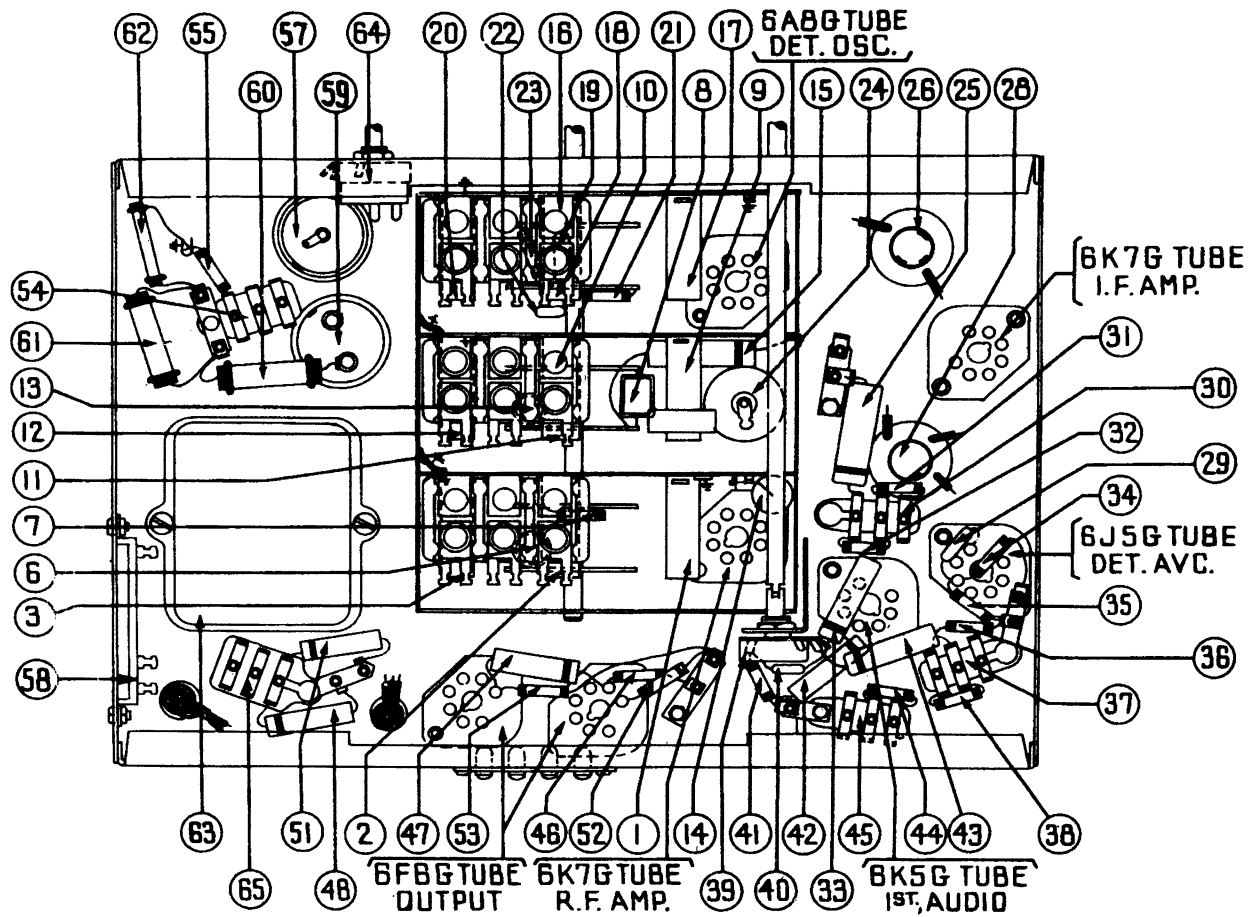


Fig. 3—Base View

Replacement Parts—Model 37-650

Schem. No.	Description	Part No.	Price List	Schem. No.	Description	Part No.	Price List	Schem. No.	Description	Part No.	Price List
1	Ant. Transformer (Broadcast).....	32-2108	\$0.80	49	Output Transformer K35-H26.....	32-7634	\$1.50		Tube Shield.....	28-2726	\$0.10
2	Ant. Transformer.....	32-2150	.80	50	Cone and Voice Coil K35.....	36-3174	.80		Terminal Panel Assembly I. F.....	38-6306	.03
3	Ant. Transformer (S. W.).....	32-2176	.80		Cone and Voice Coil H26.....	02625	1.20		Terminal Panel Antenna.....	38-7714	.15
4	Compensator Ant. (Five sections).....	31-6104		51	Condenser (.003 mfd. tubular).....	30-4469			Grammet Mtg. R. F. Unit.....	27-4317	.04
5	Tuning Condenser.....	31-1855	4.50	52	Resistor (3500 ohms, ½ watt).....	33-235339	.20		Sleeve Mtg. R. F. Unit.....	28-2257	.01
6	Condenser (.05 mfd. tubular).....	30-4020	.20	53	Resistor (490000 ohms, ½ watt).....	33-449339	.20		Screw Mtg. R. F. Unit.....	W-729	Per C .45
7	Resistor (51000 ohms, ½ watt).....	33-351339	.20	54	Condenser (.05 mfd., .03 mfd. bakelite).....	3615-YU			Washer Mtg. R. F. Unit.....	28-3927	.01
8	Condenser (40 mmfd. mica).....	30-1076	.20		Resistor (1 megohm, ½ watt).....	33-510339	.20		Washer Felt R. F. Unit.....	27-7807	Per C .40
9	R. F. Transformer (Broadcast).....	32-2105	.75	56	Field Coil K35-H26.....	36-3687	1.10		Grommet Mtg. Tuning Condenser.....	27-4325	.02
10	Compensator (R. F.) (Five sections).....	31-6110		57	Electrolytic Condenser 8.0 mfd.....	30-2024			Shadowmeter Lamp Shield.....	28-2917	.02
11	R. F. Transformer.....	32-2151	.60	58	Bias Resistor.....	33-3280			Mtg. Plate R. F. Transformer.....	28-3808	.02
12	R. F. Transformer (S. W.).....	32-2176	.70	59	Electrolytic Condenser (10, 20 mfd.).....	30-2163			Mtg. Speaker R. F. Transformer.....	27-8228	.01
13	Condenser (.05 mfd. tubular).....	30-4020	.20		Resistor (10000 ohms, 2 watt).....	33-310539			Mtg. Screw R. F. Transformer.....	W-1635	Per C .30
14	Condenser (.1 mfd. tubular).....	30-4170	.25	60	Resistor (9000 ohms, 2 watt).....	33-290539	.30		Shaft Volume Control.....	38-8060	.12
15	Condenser (.05 mfd. tubular).....	30-4123	.20	61	Resistor (25000 ohms, 1 watt).....	33-325339	.20		Clip Retaining.....	28-4394	.03
16	Compensator Osc. (Six sections).....	31-6111		62	Power Transformer 115 V., 50-60 cycles.....	32-7606			Spring.....	28-4117	Per C .40
17	Osc. Transformer (Broadcast).....	32-2120	.65		Power Transformer 115 V., 25-40 cycles.....	32-7607	.75		Cable Speaker.....	41-3202	
18	Osc. Transformer.....	32-2152	.75	64	Tone Control & A. C. Switch.....	42-1184			Cord A. C.....	I-2193	.40
19	Condenser (.003 mfd. mica).....	30-1028	.45	65	Condenser (.015 mfd. double bakelite).....	3793-DG	.40		Insulator Electrolytic Condenser.....	27-7194	.01
20	Osc. Transformer (S. W.).....	32-2182	.70		Pilot Lamp.....	34-2039	.15		Vernier Drive Tuning Condenser.....	38-7984	
21	Resistor (10000 ohms, ½ watt).....	33-810339	.20	66	Range Switch Ant.....	42-1189	1.25		I. F. Shield.....	38-7984	
22	Condenser (250 mmfd. mica).....	30-1032	.25	67	Range Switch R. F.....	42-1190	1.25		Shadowmeter Mtg. Spring.....	28-8623	Per C .70
23	Resistor (32000 ohms, ½ watt).....	33-323339	.20	68	Range Switch Osc.....	42-1191	1.25		Knob Tuning.....	27-4330	.10
24	Electrolytic Condenser (16 mfd.).....	30-2118	1.65		Selector Switch Indexing Plate & Shaft.....	42-1192	.50		Knob Tuning Vernier.....	27-4331	.10
25	Condenser (.1 mfd. tubular).....	30-4170	.25		Dial.....	27-5248	.40		Knob Tone Volume.....	27-4332	.10
26	1st I. F. Transformer & Compensators.....	32-2169			Dial Hub.....	28-7187	.12		Knob Range Switch.....	27-4326	.10
27	Shadow meter.....	45-2189	2.50		Dial Clamp.....	28-2837	.10		Terminal Cover Speaker.....	36-3672	
28	2nd I. F. Transformer & Compensators.....	32-2171			Set Screw.....	W-1641	.02				
29	Condenser (110 mmfd. mica).....	30-1031	.20		Retaining Washer.....	4436	Per C 1.50	"B" CABINET			
30	Condenser (110 mmfd. double bakelite).....	8035-DG	.25		Gear (Dial).....	28-7185	.10	36	Speaker K-35.....	36-1231	7.25
31	Resistor (240000 ohms, ½ watt).....	33-424339	.20		Gear Drive.....	31-1884	.25	28	Screw Chassis Mtg.....	28-2089	Per C .30
32	Resistor (240000 ohms, ½ watt).....	33-424339	.20		Thrust Spring.....	28-8611	.01	40	Washer Chassis Mtg.....	40-5945	
33	Condenser (.01 mfd. tubular).....	30-4124	.20		Thrust Washer.....	28-3976	Per C .30	28	Base Frame & Plate Assembly.....	28-8299	.06
34	Resistor (1 megohm, ½ watt).....	33-510339	.20		C Washer.....	28-3904	.01	28	Glass.....	28-3987	.40
35	Resistor (1 megohm, ½ watt).....	33-510339	.20		Scale Guard.....	27-8324		28	Ring.....	28-3987	1.50
36	Resistor (190000 ohms, ½ watt).....	33-449339	.20		Indicator Brkt. & Lens Assembly.....	38-7912	.30	27	Gasket.....	27-8312	.01
37	Condenser (.1 mfd. bakelite).....	33-5158	.35		Pilot Lamp.....	34-2039	.15				
38	Resistor (1 megohm, ½ watt).....	33-510339	.20		Pilot Lamp Assembly.....	38-7706	.35	"X" CABINET			
39	Volume Control.....	30-1053	1.00		Mask.....	27-5198	.30	36	Speaker H-26.....	36-1238	8.25
40	Condenser (.75 mmfd. mica).....	30-40339	.20		Mask Arm & Link Assembly.....	31-1866	.35	40	Base Frame & Plate Assembly.....	40-5937	
41	Resistor (40000 ohms, ½ watt).....	30-4125	.20		Mask Guide.....	27-8318	Per C .50	27	Glass.....	27-8300	.06
42	Condenser (.006 mfd. tubular).....	30-4358	.20		Mask Washer.....	27-8058	.11	28	Ring.....	28-3988	.45
43	Condenser (.015 mfd. tubular).....	33-399339	.20		Socket 8 prong.....	27-6057	.11	27	Gasket.....	27-8313	.01
44	Resistor (99000, ½ watt).....	8318-SU	.35		Socket 7 prong.....	27-6057	.11	28	Screws.....	W-1644	Per C .50
45	Condenser (.03 mfd. bakelite).....	33-423339	.20		Tube Shield Base.....	28-3898	.03	28	Bottom Shield Plate.....	28-4031	.45
46	Resistor (330000 ohms, ½ watt).....	30-4169	.20					28	Snap Fastener.....	28-4279	
47	Condenser (.01 mfd. tubular).....	30-4169	.20					W-1695	Screw Speaker Mtg.....	W-1695	Per C .35
48	Condenser (.003 mfd. tubular).....	50-4469	.20					W-124	Nut.....	W-124	Per C .40
								W-291	Washer.....	W-291	
								W-1495	Screw (Chassis Mtg.).....	W-1495	
								3558	Rubber (Chassis Mtg.).....	3558	
								29-2089	Washer.....	29-2089	Per C .40

Figures in blank type indicate circled figures in Base View.

Price Subject to Change without Notice

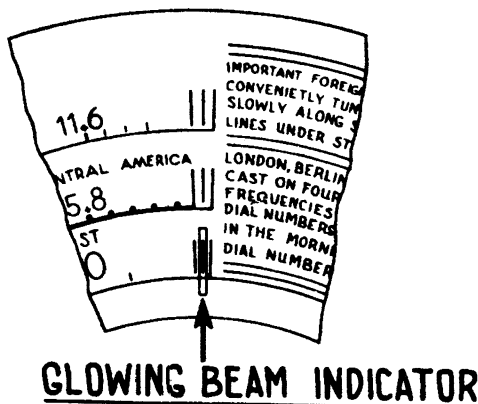


Fig. 4—Dial Calibration

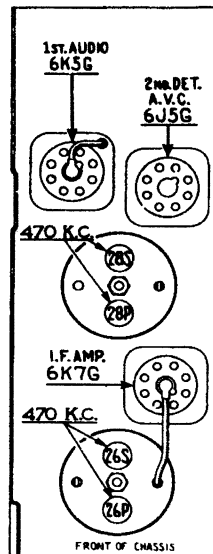


Fig. 5—I. F. Compensators—Top of Chassis

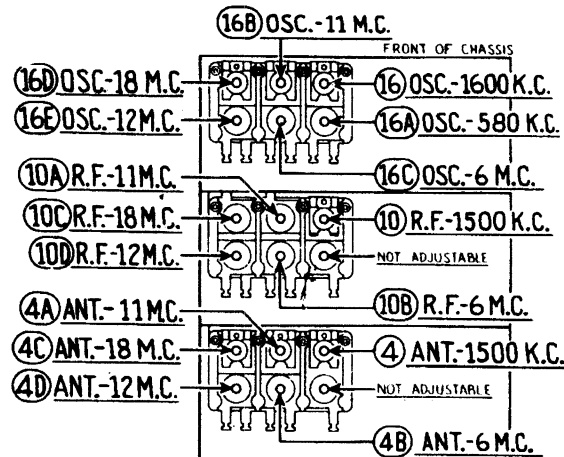


Fig. 6—R. F. Compensators—Underside of Chassis

Alignment of Compensators

The accurate adjustment of the various compensating condensers is vital to the proper functioning of this receiver. There are four compensating condensers in the I. F. Circuit, six in the Oscillator Circuit, five in the R. F. Amplifier Circuit and five in the Antenna Circuit. Incorrect adjustment will cause loss of sensitivity, unsatisfactory tone, and poor selectivity.

To accurately adjust this receiver, precision test equipment is necessary. A signal generator such as the PHILCO MODEL 088 SIGNAL GENERATOR, covering from 110 to 20,000 K. C. is recommended to adjust the compensators at the various frequencies specified. A visual indication of the receiver output is also necessary to obtain correct adjustment of the compensators. PHILCO MODEL 025 CIRCUIT TESTER contains a sensitive output meter and is recommended for these adjustments.

Philco Fibre Handle Screw-driver No. 27-7059 completes the necessary equipment for these adjustments. The locations of the various compensators are shown in Figs. 5 and 6.

The following procedure must be observed in adjusting the compensators:—

SHADOWMETER ADJUSTMENT

1. Remove the aerial and allow tubes to warm up. Then adjust shadowmeter as follows: Move the coil backward and forward until opposite edges of the shadow are $\frac{1}{4}$ of an inch from each end of shadow screen, measuring along bottom edge. Adjustment of the shadowmeter light bracket may be necessary for perfect centering.
2. Remove the (5Y4G) rectifier tube from its socket and rotate coil until shadow reaches minimum width. This width is not to exceed $\frac{1}{4}$ inch.
3. Replace the (5Y4G) rectifier tube. Shadow must not widen to more than $\frac{1}{4}$ inch or less than $\frac{1}{4}$ inch from each side of screen. If these limits are not obtained readjust the shadowmeter as given in paragraphs 1 and 2 until they are reached.

OUTPUT METER—The 025 Output Meter is connected to the plate and cathode terminals of one of the (6F6G) tubes. Adjust the meter to use the (0-30) volt scale.

DIAL CALIBRATION—Rotate the tuning condenser control to the extreme counter-clockwise position (maximum capacity). Loosen the screw of dial hub, then turn dial until the glowing indicator is centered on the second index line of dial scale (see Fig. 4). Then tighten the dial hub set screw in this position.

INTERMEDIATE FREQUENCY CIRCUIT

Frequency 470 K. C.

1. Turn volume control to maximum volume position. Connect the 088 Signal Generator output through a .1 mfd. condenser, to the control grid of the 6A8G tube and the ground connection of the output lead to the chassis.
2. Set the range switch in position No. 1 (Broadcast), then rotate the tuning condenser of the receiver to the maximum capacity position (counter-clockwise) and adjust the signal generator for 470 K. C.
3. Adjust compensators (28S) 2nd I. F. Sec., (28P) 2nd I. F. Pri., (26S) 1st I. F. Sec. and (26P) 1st I. F. Pri. for maximum reading on the output meter.

RADIO FREQUENCY CIRCUIT

Tuning Range—7.3 to 18.0 M. C.

1. Remove the signal generator output lead from the grid of the 6A8G tube and connect it through the .1 mfd. condenser to terminal No. 1 on aerial input panel and the generator ground lead to terminal No. 3, rear of chassis. Terminals 2 and 3 must be connected with the shorting link provided on the panel during these adjustments.
2. Set the range switch in position No. 3. Turn the receiver and signal generator dials to 18 M. C. Now adjust compensator (16D) by turning the screw (clock-

wise) to the maximum capacity position. Then slowly turn it counter-clockwise until a second peak signal is reached on the output meter. The first peak from maximum capacity is the image signal and must not be used. NOTE: In some cases only one peak will be found, therefore, tune the compensator to this peak. If the above procedure is correctly performed, the image signal will be found at 17.060 M. C., by advancing signal generator input and turning receiver dial to this frequency mark on the dial.

3. The antenna and R. F. compensators (4C) and (10C) are now adjusted by connecting a variable condenser of approximately 350 mmfd.,—having a good vernier drive—across the oscillator compensator (16D) contact (first contact from left side of receiver facing rear underside view of chassis) and ground. Leaving the signal generator and receiver dials at 18 M. C., tune the added condenser until the second harmonic of the receiver oscillator beats against the signal from the generator, thereby giving an indication on the output meter. It may be necessary to increase the signal generator output to obtain a signal of sufficient strength for reading on the output meter. The antenna and R. F. compensators (4C) and (10C) should then be adjusted for maximum output. Then remove external condenser and readjust compensator (16D) as given in paragraph 2 above.

4. Turn signal generator and receiver dials to 12 M. C. and adjust compensators (16E), (10D), (4D) for maximum output.

5. Now turn signal generator and receiver dials to 18 M. C. and readjust compensators (16D), (10C) and (4C) as given in Paragraphs 2 and 3 above.

Tuning Range—5.7 to 11.6

1. Set range switch in position No. 2. Rotate signal generator and receiver dials to 11 M. C. Compensator (16B) is now adjusted as given in Paragraph 2, under tuning range 7.3 to 18 M. C. above. Check image signal on the 10.06 dial mark. The only difference in the two procedures is the frequency used.

2. Turn the signal generator to 11 M. C. Then connect a 350 mmfd. variable condenser from the oscillator compensator (16B) contact (third contact from left side of the receiver, facing rear underside view of chassis) and ground. Tune the added condenser, as given in Paragraph 3 under tuning range 7.3 to 18 M. C. Now adjust compensators (10A) and (4A) for maximum output. The only difference in the two procedures is in the connection of the variable condenser and the frequency used.

3. Readjust compensator (16B) as given in Paragraph 1 for maximum output.

4. Turn signal generator and receiver dials to 6 M. C. and adjust compensators (16C), (10B) and (4B) for maximum output.

5. After the 6 M. C. end of scale is adjusted, the high frequency end is readjusted as given in Paragraphs 1, 2 and 3 above.

Tuning Range—530 to 1720 K. C.

1. Turn signal generator and receiver dials to 1600 K. C.—If signal generator scale is not calibrated for 1600 K. C. the dial of the generator may be rotated to 800 K. C. and the second harmonic of this frequency (1600 K. C.) may be used for following adjustments. Compensators (16), (10) and (4) are now adjusted for maximum output.

2. Turn signal generator and receiver dials to 580 K. C. and adjust compensator (16A) for maximum output. This is accomplished as follows:

First tune compensator (16A) for maximum output. Then vary the tuning condenser for maximum output about the 580 K. C. scale mark. Now retune compensator (16A), and again vary the tuning condenser back and forth about 580 K. C. for maximum output. This operation of first tuning the compensator, then the tuning condenser is continued until maximum output is obtained on or about the 580 K. C. dial mark.

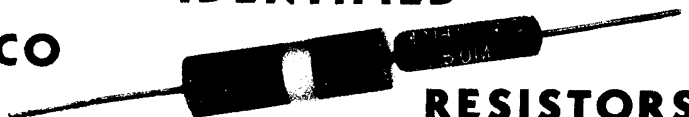
3. Turn signal generator and receiver dials to 1600 K. C. and readjust compensator (16) for maximum output.

4. Now rotate signal generator and receiver dials to 1500 K. C. and adjust compensators (10) and (4) for maximum output.

Use the New

PHILCO

IDENTIFIED



RESISTORS

YOUR DISTRIBUTOR CAN SUPPLY YOU

Save Time
and Trouble
on all
Service Jobs

SERVICE DATA

Model 37-660 is a 9 tube superheterodyne receiver designed for operation on alternating current. It has four tuning ranges, covering standard broadcast and short-wave frequencies. The chassis is constructed in four basic assembly units, concentrating the R.F., I.F., Audio and Power circuits in individual units.

The circuit includes the PHILCO Foreign Tuning System—controlled by the range switch—providing maximum sensitivity and noise-reduction, when used with the Philco High-Efficiency Aerial; automatic bass compensation in the volume control circuit; shadow tuning; automatic volume control, and a push-pull pentode output circuit.

AERIAL CONNECTIONS

The red and black leads of the High-Efficiency Aerial "transmission line" are connected to terminals 1 and 2 respectively, of the terminal panel provided on the rear of the chassis. Connect the jumper on the terminal panel across terminals 3 and 4.

If a temporary aerial is used, the jumper should be across terminals 2 and 3. The aerial connects to terminal 1 and the ground lead to terminal 3. A good ground connection is desirable in all installations.

REPLACING DIAL

To replace the dial, remove the clamp holding the dial to the hub, by turning clamp counter-clockwise, using the two holes provided on the clamp for this purpose.

REMOVING MASK ARM & LINK ASSEMBLY

First remove dial, then loosen set screw of dial hub and remove the hub and felt washer from the shaft. Now loosen screws holding indicator bracket and lens assembly, and move bracket forward about 1/2 inch. The assembly may now be removed by loosening set screw of range switch arm, then pull arm off of range switch shaft.

REMOVING SWITCH & COIL ASSEMBLIES OF R.F. UNIT

To replace any part in the switch and coil assemblies of the R.F. Unit, each assembly can be removed separately as follows:

First remove the tuning dial, mask and arm assembly. Remove the center mounting screw on the rear of the R.F. Unit. Then lift the rear of the unit and push forward until the rubber mounting grommets, on each side of the unit, clear the mounting slots. The unit is then lifted far enough from the chassis for removal of the two screws holding the selector switch indexing plate and shaft (front of unit). Then pull shaft straight out from the unit. Also, remove the volume control shaft by releasing the retaining clip, inside the chassis, from the shaft.

IMPORTANT—When selector switch shaft is replaced, care should be taken to have all wafer rotors in the same position, so that the key on the switch shaft will slide freely into the notched hole in each wafer rotor. NEVER force shaft into rotors.

Servicing Stages—It is necessary to unsolder some connecting leads in order to release the stage for servicing. If all the following connections are unfastened the stage will be entirely released. Ordinarily only one or two leads need be loosened in order to change coils, replace coupling condensers, or replace switch sections.

ANTENNA ASSEMBLY—Rear Section

1. Unsolder the wires which connect the antenna panel and I.F. Unit to the range switch and assembly shield plate ground leads.
2. Unsolder the two leads from the gang condenser terminal panel which connect to the range switch. Also lead of tubular condenser (7) at the ground lug on the R.F. Unit.
3. Remove screw holding shield plate to the unit base. This screw is located in the right hand corner of the shield plate, facing the rear underside of the chassis. The assembly can then be removed.

R.F. ASSEMBLY—Middle Section

1. Unsolder the wires from the I.F. Unit and the 6K7G plate contact in R.F. Unit which connects to the range switch. Then remove ground leads of shield plate.
2. Unsolder the leads from the gang condenser terminal panels and the lead of tubular condenser (18) at the ground lug on R.F. Unit base.

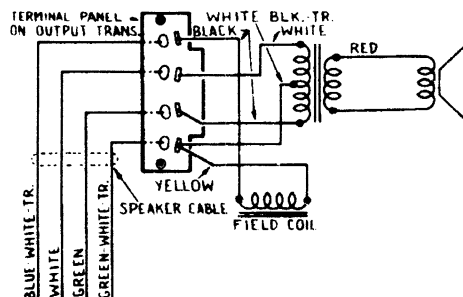
3. Remove the screw holding shield plate to the unit base. This screw is located in the right hand corner of the shield plate facing the rear underside of the chassis. Then pull assembly straight out.

OSCILLATOR ASSEMBLY—Front Section

1. The oscillator assembly can be removed by unscrewing the two screws located on each side of the R.F. Unit.
2. Unsolder the wires connecting range switch to bakelite condenser (78) in the power unit, electrolytic condenser (21) in the R.F. Unit and OSC plate contact on the 6A8G socket.
3. Remove the leads from the gang condenser terminal panels and the lead of Mica condenser (24) at the ground lug on R.F. Unit base.

Electrical Specifications

Power Supply: 115 V.
Frequency: 50-60 cycle.
 For 25 to 40 cycle operation, use the Power transformer marked with asterisk in the parts list.
Consumption: 130 Watts.
Intermediate Frequency: 470 K. C.
Output: 10 Watts.
Philco Tubes: 6K7G—R.F. Amplifier; 6A8G—Oscillator and first detector; 6K7G—I.F. Amplifier; 6J5G—2nd detector, A.V.C.; 6K5G—1st Audio; 6J5G Phase Inverter; 2-6F6G—Output; 5Y4G—Rectifier.
Tuning Ranges: Range 1—530 to 1720 K. C.; Range 2—2.3 to 7.4 M. C.; Range 3—7.35 to 11.6 M. C.; Range 4—11.5 to 18.2 M. C.
Speakers: X cabinet—H-27; B cabinet—K-36.



Speaker Wiring for Types K-36 and H-27

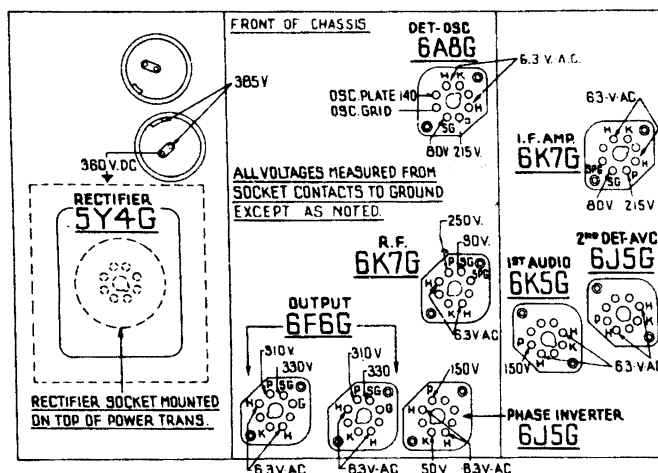


Fig. 1—Socket Voltages—Underside of Chassis View

The voltages indicated by arrows were measured with a Philco 025 Circuit Tester which contains a voltmeter having a resistance of 1000 ohms per volt. Volume Control at minimum, range switch in broadcast position, line voltage 115 A. C.

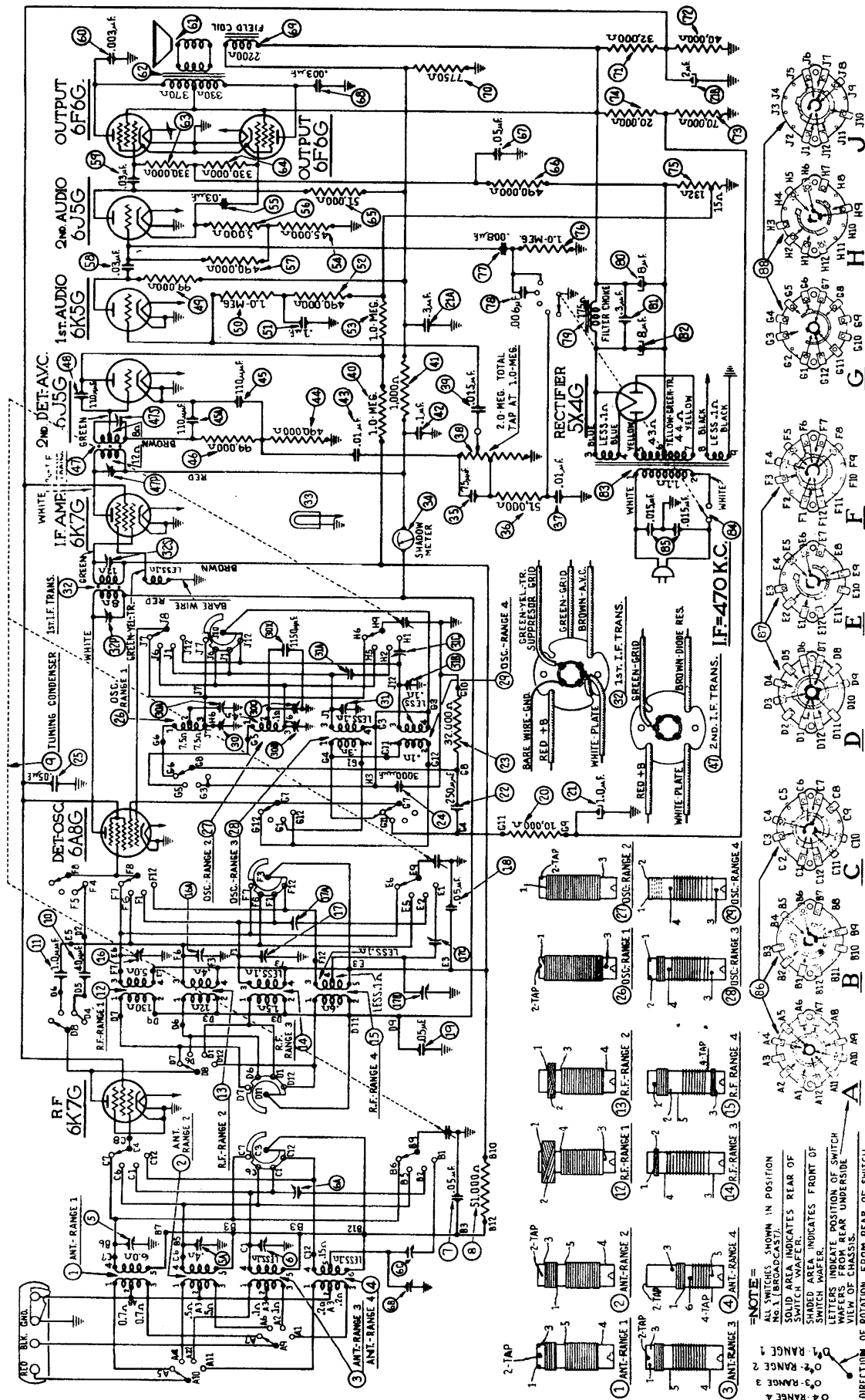


Fig. 2—Schematic Diagram
Model 37-660

NOTE:—
TUBES SHOWN IN POSITION
REAR OF CHASSIS
SOLID AREA INDICATES REAR OF
SWITCH WAFER.
SHADED AREA INDICATES FRONT OF
SWITCH WAFER.
LETTERS INDICATE POSITION OF SWITCH
WAFER.
VIEW OF CHASSIS
DIRECTION OF ROTATION FROM REAR OF SWITCH.

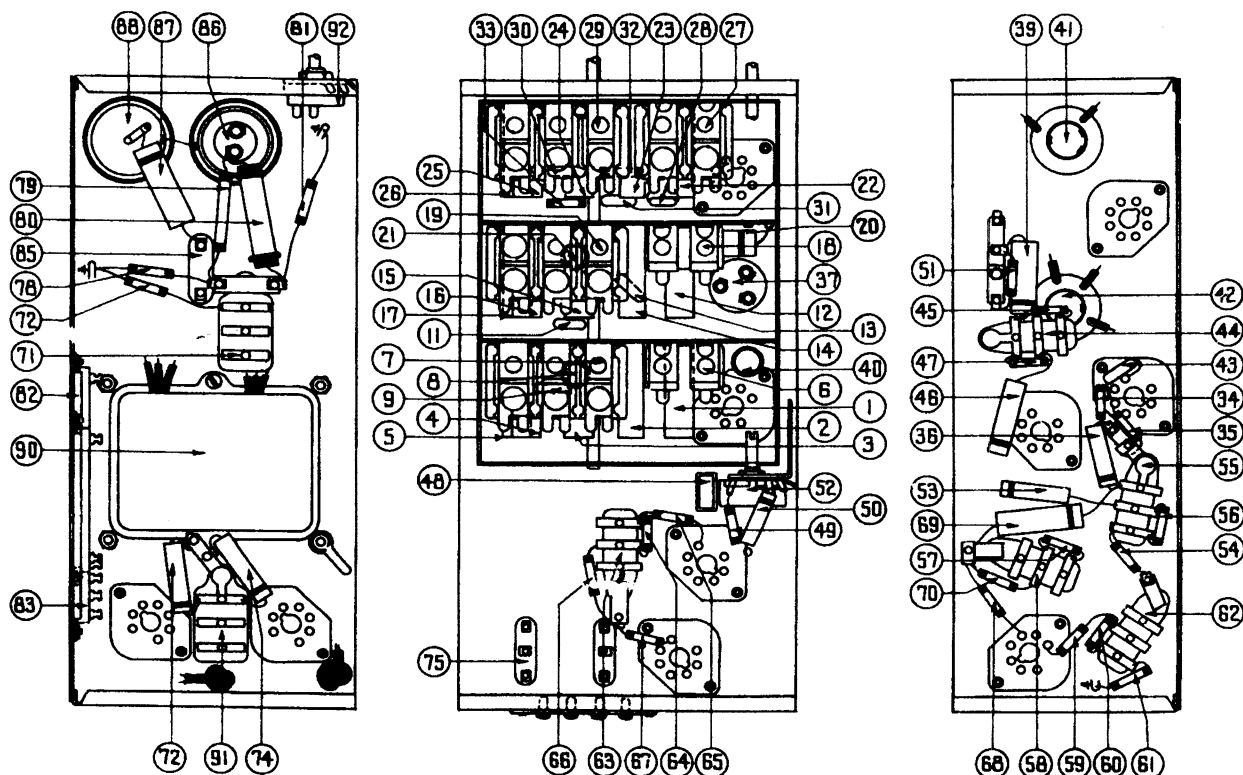


Fig. 4—Parts Location—Underside of Chassis

Replacement Parts — Model 37-670

Schem. No.	Description	Part No.	List Price	Schem. No.	Description	Part No.	List Price	Schem. No.	Description	Part No.	List Price
1	Antenna Transformer (530 to 1600 K.C.)	32-2106	\$0.80	48	Resistor (40000 ohms)	33-340339	\$0.20		Clamp	28-2837	\$0.06
2	Antenna Transformer (1.58 to 4.75 M.C.)	32-2146	.80	50	Condenser (.006 mfd. tubular)	30-4125	.20		Set Screw	W-1641	.02
3	Antenna Transformer (4.7 to 7.4 M.C.)	32-2185	.60	51	Resistor (1000 ohms)	33-210339	.20		Gear (Dial)	28-7185	.10
4	Antenna Transformer (7.35 to 11.6 M.C.)	32-2185	.70	52	Volume Control	33-5158	1.00		Gear (Drive)	31-1894	.25
5	Antenna Transformer (11.6 to 18.3 M.C.)	32-2175	.80	53	Condenser (.015 mfd. tubular)	30-4358	.90		Thrust Spring	28-5611	.01
6	Compensator (two section)	31-6093	.40	54	Resistor (400000 ohms)	33-449339	.20		Thrust Washer	28-3976	.30 C
7	Compensator (six section)	31-6112	1.40	55	Condenser (1 mfd. bakelite)	4989-SG	.25		"C" Washer	28-3904	.01
8	Condenser (.05 mfd. tubular)	30-4030	.20	56	Resistor (1 megohm)	33-510339	.20		Mask	27-5206	.20
9	Resistor (51000 ohms)	33-513339	.20	57	Resistor (99000 ohms)	33-599339	.20		Mask Arm and Link Assembly	31-1887	.45
10	Tuning Condenser	31-1855	4.50	58	Condenser (.08 mfd. bakelite)	8318-SU	.35		Mask Washer	27-5318	.50 C
11	Condenser (40 mmfd. mica)	30-1076	.20	59	Resistor (400000 ohms)	33-449339	.20		Mask Guide and Bracket	38-7876	.25
12	R. F. Transformer (530 to 1600 K.C.)	32-2106	.75	60	Resistor (5000 ohms)	33-250339	.20		Screen and Lens Holder Assembly	31-1900	.30
13	Condenser (5 mmfd. mica)	30-1077	.20	61	Resistor (45000 ohms)	33-345339	.20		Volume Control Shaft	38-8090	.25
14	R. F. Transformer (1.58 to 4.75 M.C.)	32-2147	.60	62	Condenser (.03 mfd. bakelite)	8318-SU	.20		Retaining Clip	28-4117	.40 C
15	R. F. Transformer (4.7 to 7.4 M.C.)	32-2177	.60	63	Condenser (.03 mfd. bakelite)	8318-SU	.20		Spring	28-4117	.40 C
16	R. F. Transformer (7.3 to 11.6 M.C.)	32-2178	.60	64	Resistor (320000 ohms)	33-453339	.20		Tube Shield	28-3726	.25
17	R. F. Transformer (11.6 to 18.3 M.C.)	32-2176	.70	65	Resistor (99000 ohms)	33-599339	.20		Tube Shield Base	28-3898	.11
18	Compensator (two section)	31-6093	.40	66	Resistor (320000 ohms)	33-453339	.20		Socket 7 prongs	27-6057	.11
19	Compensator (six section)	31-6112	1.40	67	Resistor (99000 ohms)	33-599339	.20		Socket 8 prongs	27-6058	.11
20	Condenser (.05 mfd. tubular)	30-4030	.20	68	Resistor (51000 ohms)	33-351339	.20		Socket Rectifier	27-6063	.11
21	Condenser (.08 mfd. tubular)	30-4030	.20	69	Condenser (1 mfd. tubular)	30-4455	.20		Terminal Panel (Ant.)	28-7714	.15
22	Oscillator Transformer (530 to 1600 K.C.)	32-2130	.65	70	Resistor (51000 ohms)	33-351339	.20		Grommet Mtg. R. F. Unit	27-4317	.04
23	Oscillator Transformer (1.58 to 4.75 M.C.)	32-2149	.60	71	Condenser (.015 mfd. dual bakelite)	2908-LU	.20		Sleeve Mtg. R. F. Unit	28-3267	.01
24	Oscillator Transformer (4.7 to 7.4 M.C.)	32-2186	.70	72	Resistor (1 megohm)	33-510339	.20		Washer Mtg. R. F. Unit	27-7807	.50 C
25	Oscillator Transformer (7.3 to 11.6 M.C.)	32-2186	.80	73	Condenser (.008 mfd. tubular)	30-4459	.20		Screw Mtg. R. F. Unit	W-720	.45 C
26	Oscillator Transformer (11.6 to 18.3 M.C.)	32-2182	.70	74	Condenser (.008 mfd. tubular)	30-4459	.20		Rubber Mtg. (Gang Condenser)	27-4325	.02
27	Compensator (four section)	31-6106	.40	75	Audio Input Transformer	32-7671	2.50		Spring Mtg. Shadowmeter	28-9632	.70 C
28	Condenser (700 mmfd.)	30-63	.25	76	Output Transformer (K-37, H-28)	32-7638	.20		Plate Mtg. R. F. Transformer	28-3208	.25
29	Compensator (six section)	31-6112	.40	77	Cone and Voice Coil (K-37)	38-3020	.20		Spacer Mtg. R. F. Transformer	27-5226	.25
30	Condenser (3000 mmfd. mica)	30-1098	.45	78	Cone and Voice Coil (H-28)	02825	.20		Screw Mtg. R. F. Transformer	W-1635	.15
31	Condenser (250 mmfd. mica)	30-1083	.25	79	Resistor (70000 ohms)	33-370439	.20		Screw Chassis Mtg.	W-1486	1.50 C
32	Resistor (32000 ohms)	33-322339	.20	80	Resistor (15000 ohms)	33-315339	.20		Washer Chassis Mtg.	28-3099	.30 C
33	Resistor (10000 ohms)	33-310339	.20	81	Resistor (25000 ohms)	33-325339	.20		Shield (Chassis Bottom)	28-6145	.45
34	Resistor (1.0 megohm)	33-510339	.20	82	Resistor (51000 ohms)	33-351339	.20		Snap Fasteners	28-4279	.01
35	Condenser (.05 mfd. tubular)	30-4444	.20	83	Resistor (5600 ohms wirewound)	33-3283	.60		Rubber Cushion (X Cabinet)	3555	.25
36	Electrolytic Condenser (2, 1, 1 mfd.)	30-2123	1.85	84	Resistor (250 ohms wirewound)	33-3281	.60		Rubber Bushing (two required)	27-4390	.10
37	Shadowmeter	45-3190	2.50	85	Field Coil Assembly (K-37, H-28)	34-3104	.20		Rubber Washer	5180	.10
38	Condenser (.05 mfd. tubular)	30-4122	.20	86	Filter Choke	32-7115	1.90		Speaker Cable	41-3210	.40
39	Condenser (.05 mfd. tubular)	30-4122	.20	87	Electrolytic Condenser (8, 10 mfd.)	30-2045	1.80		A. C. Cord	L-2183	.10
40	1st I. F. Transformer	33-1170	2.00	88	Condenser (.25 mfd. tubular)	30-4446	.25		Knob Tuning	27-4320	.10
41	2nd I. F. Transformer	33-1173	2.00	89	Electrolytic Condenser (8 mfd.)	30-2025	1.85		Knob Tuning Vernier	27-4321	.10
42	Condenser (110 mmfd. mica)	30-1081	.20	90	Pilot Lamp	34-2099	.15		Knob Tone & Volume	27-4322	.10
43	Condenser (110 mmfd. dual bakelite)	30-1081	.20	91	Power Transformer 115 V., 50-60 cycles	32-7640	6.50		Knob Range Switch	27-4323	.10
44	Resistor (99000 ohms)	33-599339	.20	92	Power Transformer 115 V., 25-40 cycles	32-7641	.40				
45	Condenser (.01 mfd. tubular)	30-4124	.25	93	Condenser (.015 mfd. dual bakelite)	3793-DG	.40				
46	Resistor (400000 ohms)	33-449339	.20	94	Power and Tone Control Switch	42-1184	.75				
47	Condenser (.75 mmfd. mica)	30-1065	.20	95	Range Switch (Ant.)	42-1211	1.00				
				96	Range Switch (R.F.)	42-1255	1.00				
				97	Range Switch (Osc.)	42-1212	1.00				
				98	Shadowmeter Lamp	34-3094	.09				
					Switch Index Plate and Shaft	42-1187	.50				
					Pilot Lamp Assembly	28-7706	.25				
					Dial	27-5213	.40				
					Hub	28-7187	.15				

Figures in black type indicate circled figures in Base View. Prices Subject to Change Without Notice.

September, 1936.

Printed in U.S.A.

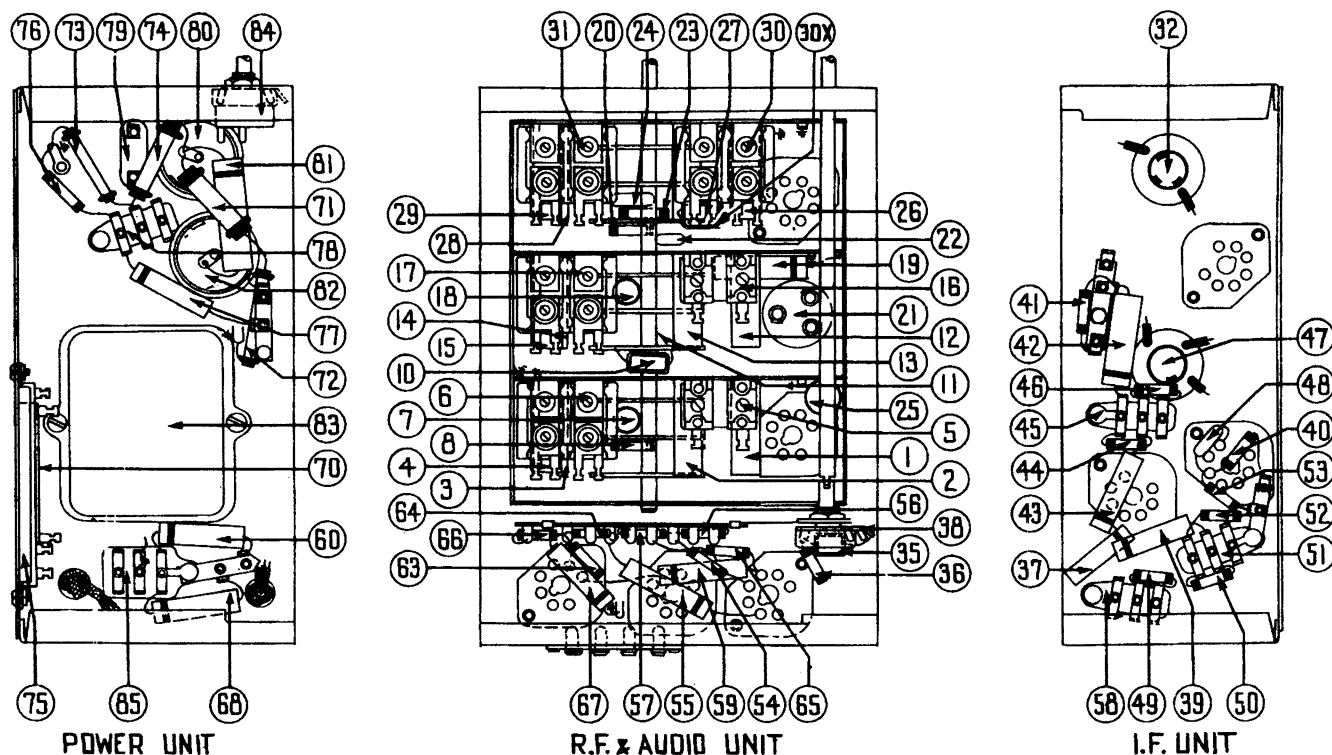


Fig. 3—Parts Locations—Underside View of Chassis.

Replacement Parts—Model 37-660

Schem. No.	Description	Part No.	List Price	Schem. No.	Description	Part No.	List Price	Schem. No.	Description	Part No.	List Price
1	Antenna Transformer (530 to 1720 K.C.)	32-2108	\$0.80	45	Condenser (110 mmfd. twin bakelite)	8035-DG	.25		Screw Set	W-1641	
2	Antenna Transformer (2.3 to 7.4 M.C.)	32-2119	.65	46	Resistor (99000 ohms, ½ watt)	33-399339	\$0.20		Dial Gear	28-7185	\$0.10
3	Antenna Transformer (7.35 to 11.6 M.C.)	32-2185	.70	47	2nd I.F. Transformer	32-2171			Drive Gear	31-1884	.25
4	Antenna Transformer (11.5 to 18.2 M.C.)	32-2175	.80	48	Condenser (110 mmfd. mica)	30-1031	.20		Thrust Spring	28-8611	.01
5	Compensator (Two sections) brown dot	31-6120		49	Resistor (99000 ohms, ½ watt)	33-399339	.20		Thrust Washer	28-3976	.30 C
6	Compensator (Four sections) brown dot	31-6105		50	Resistor (1 megohm, ½ watt)	33-510339	.30		C Washer	28-3904	.01
7	Condenser (.05 mfd. tubular)	30-4020	.20	51	Condenser (.1 mfd. bakelite)	4989-SG	.35		Vernier Drive Assem.	31-1871	
8	Resistor (51000 ohms, ½ watt)	33-351339	.20	52	Resistor (490000 ohms, ½ watt)	33-449339	.20		Mask	27-5240	
9	Tuning Condenser	31-1855	4.50	53	Resistor (1 megohm, ½ watt)	33-510339	.30		Mask Arm & Link Assembly	31-1887	
10	Condenser (40 mmfd. mica)	30-1076	.20	54	Resistor (45000 ohms, ½ watt)	33-345339	.20		Mask Washer	27-8318	.50 C
11	Condenser twisted wire & lugs	31-6120		55	Condenser (.03 mfd. tubular)	30-4380	.20		Mask Guide Bracket	38-7876	
12	R.F. Transformer (530 to 1720 K.C.)	32-2105	.75	56	Resistor (5000 ohms, ½ watt)	33-250339	.20		Screen & Lens Holder Assembly	31-1900	
13	R.F. Transformer (2.3 to 7.4 M.C.)	32-2106	.65	57	Resistor (490000 ohms, ½ watt)	33-449339	.20		Pilot Lamp Assembly	38-7706	
14	R.F. Transformer (7.3 to 11.6 M.C.)	32-2178	.60	58	Condenser (.03 mfd. bakelite)	8318-SU	.35		Shadow Meter Lamp Shield	28-2917	.35
15	R.F. Transformer (11.5 to 18.2 M.C.)	32-2176	.70	59	Condenser (.03 mfd. tubular)	30-4380	.20		Shadow Meter Mtg. Spring	28-8623	.70 C
16	Compensator (Two sections) brown dot	31-6120		60	Condenser (.003 mfd. tubular)	30-4469			Socket, 7 Prong	27-6057	.11
17	Compensator (Four sections) red dot	31-6106		61	Cone & Voice Coil (H-27)	02625	1.20		Tube Shield	28-2726	.10
18	Condenser (.05 mfd. tubular)	30-4020	.20	62	Cone & Voice Coil (K-36)	36-3020			Tube Shield Base	28-3898	.03
19	Condenser (.05 mfd. tubular)	30-4123	.20	63	Output Transformer (H-27, K-36)	32-7634	1.50		Volume Control Shaft	28-6500	.12
20	Resistor (10000 ohms, ½ watt)	33-310339	.20	64	Resistor (330000 ohms, ½ watt)	33-433339	.20		Retaining Clips	28-8610	.03
21	Electrolytic Condenser (three sections 1, 2, 3 mfd.)	30-2122	1.85	65	Resistor (330000 ohms, ½ watt)	33-433339	.20		Washer (Volume Control)	28-4186	.75 C
22	Condenser (250 mmfd. mica)	30-1032	.25	66	Resistor (490000 ohms, ½ watt)	33-449339	.20		Washer Volume Control (Spring)	4436	1.50 C
23	Resistor (32000 ohms, ½ watt)	33-332339	.20	67	Condenser (.05 mfd. tubular)	30-4444	.20		Spring	28-4117	.40 C
24	Condenser (.003 mfd. mica)	30-1028	.45	68	Condenser (.003 mfd. tubular)	30-4469			Grommet Mtg. R.F. Unit	27-4317	.04
25	Condenser (.05 mfd. tubular)	30-4123	.20	69	Field Coil (H-27, K-36)	36-3673			Sleeve Mtg. R.F. Unit	28-2257	.01
26	Oscillator Transformer (530 to 1720 K.C.)	32-2120	.65	70	Resistor (7750 ohms, wirewound)	33-3279			Screw Mtg. R.F. Unit	W-729	.45 C
27	Oscillator Transformer (2.3 to 7.4 M.C.)	32-2121	.40	71	Resistor (32000 ohms, 2 watts)	33-332539			Washer	28-3927	.01
28	Oscillator Transformer (7.3 to 11.6 M.C.)	32-2186	.70	72	Resistor (40000 ohms, 1 watt)	33-340339	.20		Mtg. Rubber Tuning Condenser	27-4325	.02
29	Oscillator Transformer (11.5 to 18.2 M.C.)	32-2182	.70	73	Resistor (70000 ohms, 1 watt)	33-370439	.20		Speaker Cable	41-3202	
30	Compensator (Four sections) yellow dot	31-6108		74	Resistor (20000 ohms, 2 watt)	33-320539			A. C. Cord	1-2183	.40
30x	Condenser (1150 mmf)	30-1081		75	Resistor (Wirewound)	33-3278			Terminal Panel Ant.	38-7714	.15
31	Compensator (Four sections) brown dot	31-6105		76	Resistor (1 megohm, ½ watt)	33-510339	.20		Knob Assembly	27-4330	.10
32	1st I.F. Transformer	32-2169		77	Condenser (.008 mfd. tubular)	30-4112	.20		Knob Assembly	27-4331	.10
33	Pilot Lamp Shadowmeter	34-2039	.15	78	Condenser (.006 mfd. bakelite)	7625-SU	.25		Knob Assembly	27-4332	.10
34	Shadowmeter	45-2189	2.50	79	Filter Choke	32-7115	1.80		Knob Assembly	27-4326	.10
35	Condenser (75 mmfd. mica)	30-1053	.20	80	Electrolytic Condenser 8 uf.	30-2026	1.05				
36	Resistor (51000 ohms, ½ watt)	33-351339	.20	81	Condenser (.3 mfd. tubular)	30-4465					
37	Condenser (.006 mfd. tubular)	30-4125	.20	82	Electrolytic Condenser 8 uf.	30-2026	1.05				
38	Volume Control	33-5158	1.00	83	Power Transformer (115 V., 50-60 Cycles)	32-7615					
39	Condenser (.015 mfd. tubular)	30-4358	.20		Power Transformer (115 V., 25-40 Cycles)	32-7616					
40	Resistor (1 megohm, ½ watt)	33-510339	.20	84	Tone Control & AC Switch	42-1184	.75				
41	Resistor (1000 ohms, ½ watt)	33-210339	.20	85	Condenser (.015 Twin Bakelite)	7393-DG	.40				
42	Condenser (.1 mfd. tubular)	30-4170	.25	86	Antenna Range Switch	42-1202	1.50				
43	Condenser (.01 mfd. tubular)	30-4174	.25	87	R.F. Range Switch	42-1203	1.50				
44	Resistor (490000 ohms, ½ watt)	33-449339	.20	88	Oscillator Range Switch	42-1204	1.50				
					Switch Indexing Plate & Shaft	42-1186					
					Dial	27-5209	.55				
					Hub	28-7187	.12				
					Clamp	28-2837	.10				

Figures in black type indicate circled figures in Base View.

Prices Subject to Change without Notice

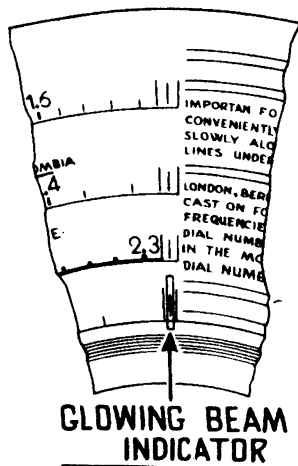


Fig. 4—Dial Calibration

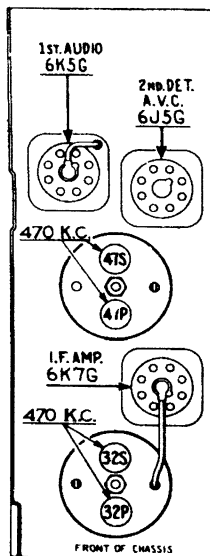


Fig. 5—Locations of I.F. Compensators Top of Chassis

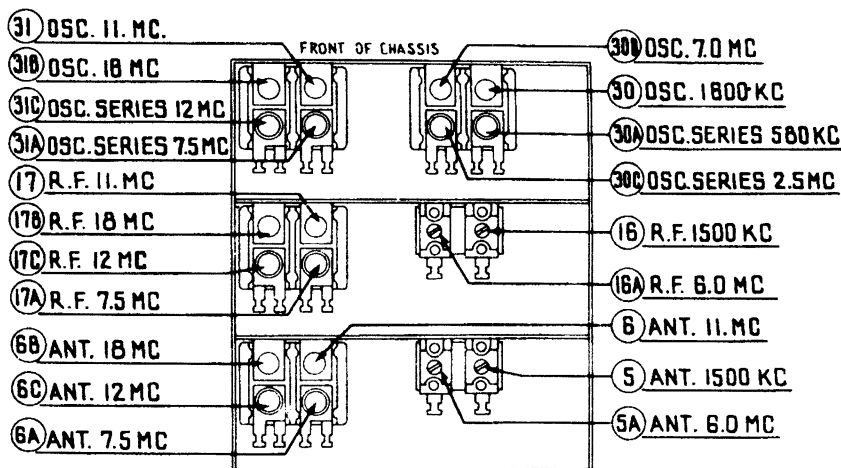


Fig. 6—Locations of R.F. Compensators Underside of Chassis

Alignment of Compensators

To accurately adjust this receiver, precision test equipment is necessary. A signal generator such as the PHILCO MODEL 088 SIGNAL GENERATOR, covering from 10 to 20,000 K. C. is recommended to adjust the compensators at the various frequencies specified. A visual indication of the receiver output is also necessary to obtain correct adjustment of the compensators. PHILCO MODEL 025 CIRCUIT TESTER contains a sensitive output meter and is recommended for these adjustments.

Philco Fibre Handle Screw-driver No. 27-7059 completes the necessary equipment for these adjustments. The locations of the various compensators are shown in Figs.

The following procedure must be observed in adjusting the compensators:

DIAL CALIBRATION—In order to adjust this receiver correctly, the dial must be aligned to track properly with the tuning condenser. To do this rotate the tuning control to the extreme counter-clockwise position (maximum capacity). Loosen the set screw of the dial hub, then turn dial until the glowing indicator is centered between the first and second index lines of dial scale (see Fig. 4). Now tighten the dial hub set screw in this position.

SHADOW METER ADJUSTMENT—Remove aerial and allow tubes to warm up. Then adjust shadow meter as follows:

1. Move the shadow meter coil backwards and forwards, until the opposite edges of the shadow are $\frac{1}{8}$ of an inch from each end of the shadow screen, measuring along the bottom edge of the screen. Adjustment of the shadow meter light bracket may be necessary for perfect centering.

2. Remove the rectifier tube from its socket, and rotate coil until shadow reaches minimum width. This width must not exceed $\frac{1}{8}$ of an inch.

3. Replace the 5X4G rectifier tube in its socket. The shadow should then widen to not more than $\frac{1}{8}$ inch or less than $\frac{1}{8}$ inch from each side of the screen measuring along the bottom edge. If these limits are not obtained readjust the shadow meter as given in paragraphs 1 and 2 until they are reached.

OUTPUT METER—The 025 Output Meter is connected between the plate and cathode prongs of one of the 6F6G tubes. The meter is adjusted to use the (0-30) volt scale.

INTERMEDIATE FREQUENCY CIRCUIT

Frequency 470 K. C.

1. Connect the 088 Signal Generator output lead through a .1 mfd. condenser to the control grid of the 6A8G tube and the ground connection of the output lead to the chassis. Turn the Volume Control to maximum volume position.

2. Set the range switch in position No. 1 (Broadcast), then rotate the tuning condenser of the receiver to approximately 580 K. C. and adjust the signal generator for 470 K. C.

3. Adjust compensators @s 2nd I.F. sec., @p 2nd I.F. Pri., @s 1st I.F. Sec. and @tp 1st I.F. Pri. for maximum reading on the output meter.

RADIO FREQUENCY CIRCUIT

Tuning Range—11.5 to 18.2 M. C.

1. Remove the signal generator output lead from the grid of the 6A8G tube and connect it with the .1 mfd. condenser to terminal No. 1 on aerial input panel and the generator ground lead to terminal No. 3, rear of chassis. Terminals 2 and 3 must be connected with the shorting link provided on the panel.

2. Set the range switch in position 4. Turn the receiver and signal generator dials to 18 M. C. Now adjust compensator @b by turning the screw (clockwise) to the maximum capacity position, then slowly turning it (counter-clockwise) until a second peak signal is reached on the output meter. The first peak from maximum capacity is the image signal and must not be used. NOTE—In adjusting some receivers only one peak will be observed, therefore, tune the compensator to maximum on this peak. If the above procedure is correctly performed, the image signal will be found at 17.06 M. C., by advancing signal generator attenuator and turning receiver dial to this frequency mark on the dial.

3. The antenna and R.F. compensators @b and @c are now adjusted by connecting a variable condenser of approximately 350 mmfd.—having a good vernier drive—across the oscillator compensator @b contact (first contact from left side of the receiver facing rear underside view of chassis) and ground. Leaving the

signal generator and receiver dials at 18 M. C., tune the added condenser from the maximum capacity point until the second harmonic of the receiver oscillator beats against the signal from the generator thereby bringing in the signal. The antenna and R.F. compensators @b and @c are then adjusted for maximum output. Now remove the external condenser and readjust compensator @b as given in paragraph 2 above.

4. Turn signal generator and receiver dials to 12 M. C. and adjust compensator @c for maximum output. Then adjust compensators @c and @c for maximum output.

5. Now turn signal generator and receiver dials to 18 M. C. and readjust compensators @b Osc., @b Ant. and @b R.F. as given in paragraphs 2 and 3 above.

Tuning Range (7.35) to (11.6) M. C.

1. Set range switch in position 3. Rotate signal generator and receiver dials to 11 M. C. Now adjust compensator @b by turning the screw (clockwise) to the maximum capacity position, then slowly turn it (counter-clockwise) until a second peak signal is reached on the output meter. The first peak from maximum capacity is the image signal and must not be used. NOTE—In adjusting some receivers only one peak will be observed, therefore, tune the compensator to maximum on this peak. If the above procedure is correctly performed, the image signal will be found at 10.06 M. C. by advancing the signal generator attenuator and turning receiver dial to this frequency mark on the dial.

2. Using the 11 M. C. signal, compensators @ R.F. and @ Ant. are adjusted by using the procedure given in paragraph 3, under tuning range (11.5) to (18.2) M. C., with the exception, that the external condenser is connected from compensator @ contact to ground. This contact is the third one from left side of the receiver facing rear underside view of chassis. Also use a 11 M. C. signal.

3. Readjust compensator @ Osc. as given in paragraph 1 above.

4. Turn signal generator and receiver dial to 7.5 M. C. and adjust compensators @a Osc. series @a R.F. and @a Ant. for maximum output.

5. Due to the slight interaction of the high and low frequency compensators of this range, compensators @ Osc., @ R.F. and @ Ant. are readjusted using procedure in paragraphs 1 and 2 above.

Tuning Range 2.3 to 7.4 M. C.

1. Set range switch in Position 2. Turn signal generator and receiver dials to 7.0 M. C. Now adjust compensators @b Osc., @a R.F. and @a Ant. for maximum output.

2. Turn signal generator and receiver dials to 2.35 M. C. Compensator @c is now adjusted for maximum as follows:

First tune compensator @c for maximum output. Then vary the tuning condenser for maximum output about the 2.35 dial mark. Now retune compensator @c, and again vary the tuning condensers back and forth about the 2.35 dial mark for maximum output. This operation of first tuning the compensator, then the tuning condenser is continued until maximum output is obtained at or about the 2.35 dial mark.

If the signal generator is not accurately calibrated the maximum point on the dial of the receiver may fall slightly above or below the dial mark.

3. Turn the signal generator and receiver dials to 7.0 M. C. and readjust compensator @b for maximum output. Then turn signal generator and receiver dials to 6.0 M. C. and adjust compensators @a R.F. and @a Ant. for maximum output.

Tuning Range 530 to 1720 K. C.

1. Set range switch in position No. 1 (Broadcast). Rotate signal generator and receiver dials to 1600 K. C. Now adjust compensators @ Osc., @ R.F. and @ Ant. for maximum output.

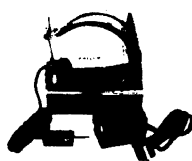
2. Tune signal generator and receiver dials to 580 K. C. Compensator @a Osc. series is then adjusted for maximum output as given in paragraph 2 under tuning range 2.3 to 7.4 M. C., the only difference in the procedure being in the frequency used.

3. Readjust compensator @ for maximum output, by turning signal generator and receiver dials to 1600 K. C.

4. Turn signal generator and receiver dials to 1500 K. C. and adjust compensators @ R.F. and @ Ant. for maximum output.

PHILCO HEADPHONE KITS

You can sell one to almost any Radio owner
An Easy source of Profit to Servicemen



THREE TYPES NOW AVAILABLE

1. For octal base tubes (Part No. 45-2227)
2. For plain base tubes (Part No. 45-1167)
3. Universal type (Part No. 45-2225)

(With separate use of speaker)

LIST PRICE

\$7.50

Either Type

SERVICE DATA

Model 37-670 is an 11 tube superheterodyne receiver designed for operation on alternating current. It has five tuning ranges, covering standard broadcast and short-wave frequencies. The chassis is constructed in four basic assembly units, concentrating the R.F., I.F., Audio and Power circuits in individual units.

The circuit includes the PHILCO Foreign Tuning System—controlled by the range switch—providing maximum sensitivity and noise-reduction, when used with the Philco High-Efficiency Aerial; automatic bass compensation in the volume control circuit; shadow tuning; automatic volume control, and a push-pull class "A" output circuit.

AERIAL CONNECTIONS

The red and black leads of the High-Efficiency Aerial "transmission line" are connected to terminals 1 and 2 respectively, of the terminal panel provided on the rear of the chassis. Connect the jumper on the terminal panel across terminals 3 and 4.

If a temporary aerial is used, the jumper should be across terminals 2 and 3. The aerial connects to terminal 1 and the ground lead to terminal 3. A good ground connection is desirable in all installations.

REPLACING DIAL

To replace the dial, remove the clamp holding the dial to the hub, by turning clamp counter-clockwise, using the two holes provided on the clamp for this purpose.

REMOVING MASK ARM & LINK ASSEMBLY

First remove dial, then loosen set screw of dial hub and remove the hub and felt washer from the shaft. Now loosen screws holding indicator bracket and lens assembly, and move bracket forward about 1/2 inch. The assembly may now be removed by loosening set screw of range switch arm, then pulling arm off of range switch shaft.

REMOVING SWITCH & COIL ASSEMBLIES OF R.F. UNIT

To replace any part in the switch and coil assemblies of the R.F. Unit, each assembly can be removed separately as follows:

First remove the tuning dial, mask and arm assembly. Remove the center mounting screw on the rear of the R.F. Unit. Then lift the rear of the unit and push forward until the rubber mounting grommets, on each side of the unit, clear the mounting slots. The unit is then lifted far enough from the chassis for removal of the two screws holding the selector switch indexing plate and shaft (front of unit). Then pull shaft straight out from the unit. Also, remove the volume control shaft by releasing the retaining clip, inside the chassis, from the shaft.

IMPORTANT—When selector switch shaft is replaced, care should be taken to have all wafer rotors in the same position, so that the key on the switch shaft will slide freely into the notched hole in each wafer rotor. **NEVER** force shaft into rotors.

Servicing Stages—It is necessary to unsolder some connecting leads in order to release the stage for servicing. If all the following connections are unfastened the stage will be entirely released. Ordinarily only one or two leads need be loosened in order to change coils, replace coupling condensers, or replace switch sections.

ANTENNA ASSEMBLY—Rear Section

1. Unsolder the wires which connect the antenna panel and I.F. Unit to the range switch, also the assembly shield ground leads.
2. Unsolder the two leads from the gang condenser terminal panel which connect to the range switch. Also the lead of tubular condenser (40) at the ground lug on the R.F. Unit.
3. Remove the screw holding the shield plate to the unit base. This screw is located in the right hand corner of the shield plate, facing the rear underside of the chassis. The assembly can then be removed.

R.F. ASSEMBLY—Middle Section

1. Unsolder the wires from the I.F. Unit and the 6K7G plate contact in R.F. Unit which connect to the range switch. Then remove ground leads of shield plate.
2. Unsolder the leads from the gang condenser terminal panels and the lead connecting D2 on the range switch to the 6K7G Plate Contact.
3. Remove the screw holding the shield plate to the unit base. This screw is located in the right hand corner of the shield plate facing the rear underside of the chassis. Then pull the assembly straight out.

OSCILLATOR ASSEMBLY—Front Section

1. Unscrew the two screws located on each side of the R.F. Unit.
2. Unsolder the wires connecting the range switch to resistors (81) and (78) in the power unit, electrolytic condenser (77) in the R.F. Unit and Osc. plate and grid contacts on the 6A8G socket.
3. Remove the leads from the gang condenser terminal panels and the lead of Mica condenser (30) at the ground lug on R.F. Unit base. With these leads disconnected lift oscillator section from unit.

Electrical Specifications

POWER SUPPLY:

Voltage	Frequency	Power Consumption
115	50-60	130 watts
115	25-40	130 watts
220		

Power transformers for the different voltage and frequency ratings are listed in the Parts List, page 3.

Intermediate Frequency: 470 K. C.

Audio Output: 10 watts

Philco Tubes Used: 6K7G, R.F. Amplifier; 6A8G, Oscillator and First Detector; 6K7G, I.F. Amplifier; 6J5G, 2nd Detector, A.V.C.; 6J5G, First Audio; 6J5G, Phase Inverter; 2-6J5G, Push-Pull Drivers; 2-6F6G, Output; 5X4G, Rectifier.

Tuning Ranges: Five. Range 1—530-1600 K. C.; Range 2—1.58 to 4.75 M. C.; Range 3—4.7 to 7.4 M. C.; Range 4—7.35 to 11.6 M. C.; Range 5—11.5 to 18.2 M. C.

Speakers: "X" Cabinet, H-28; "B" Cabinet, K-37.

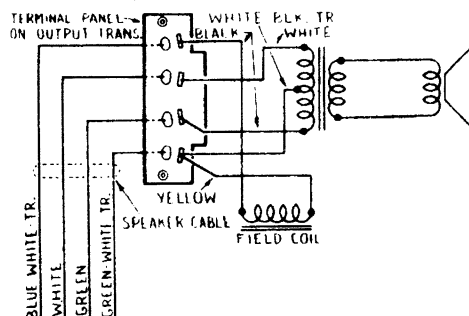


Fig. 1—Speaker Wiring for Types K-37 and H-28

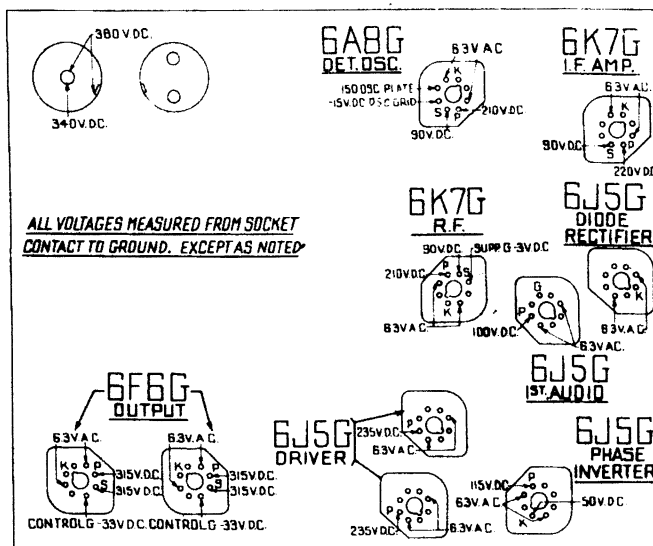


Fig. 2—Socket Voltages—Underside of Chassis View

The voltages indicated by arrows were measured with a Philco 825 Circuit Tester which contains a voltmeter having a resistance of 1000 ohms per volt. Volume Control at minimum, range switch in broadcast position, line voltage 115 A. C.

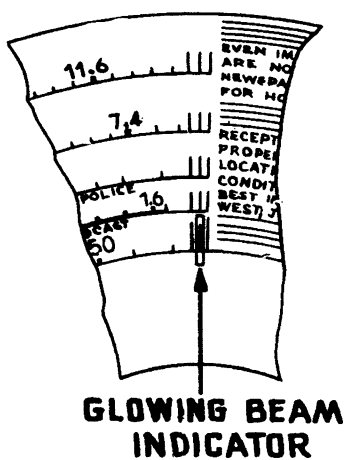


Fig. 5—Dial Calibration

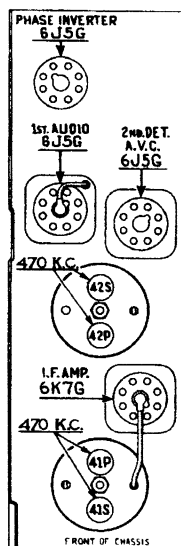


Fig. 6—I.F. Compensators Top of Chassis

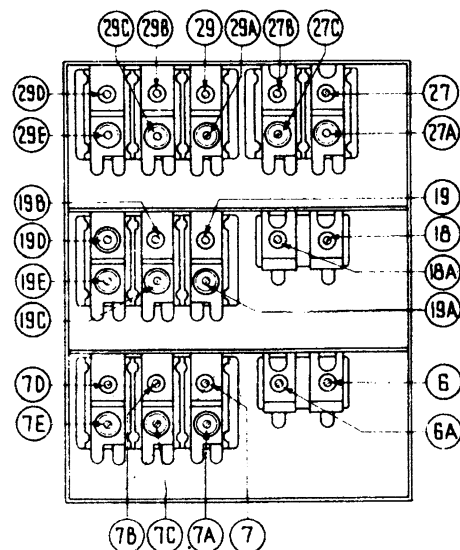


Fig. 7—R.F. Compensators Underside of Chassis

Alignment of Compensators

To accurately adjust this receiver, precision test equipment is necessary. A signal generator such as the PHILCO MODEL 068 Signal Generator, covering from 110 to 20,000 K. C. is recommended for use in adjusting the compensators at the various frequencies specified. A visual indication of the receiver output is also necessary to obtain correct adjustment of the compensators.

PHILCO MODEL 025 CIRCUIT TESTER contains a sensitive output meter and is recommended for these adjustments.

Philco Fibre Handle Screw-driver No. 37-7059 completes the necessary equipment for these adjustments. The locations of the various compensators are shown in Figs. 6 and 7.

The following procedure must be observed in adjusting the compensators:

DIAL CALIBRATION—In order to adjust this receiver correctly, the dial must be aligned to track properly with the tuning condenser. To do this rotate the tuning control to the extreme counter-clockwise position (maximum capacity). Loosen the set screw of the dial hub, then turn dial until the glowing indicator is centered on second index line of dial scale (see Fig. 5). Now tighten the dial hub set screw in this position.

SHADOW METER ADJUSTMENT—Remove aerial and allow tubes to warm up. Then adjust the shadow meter as follows:

1. Move the shadow meter coil backwards and forwards, until the opposite edges of the shadow are $\frac{1}{4}$ of an inch from each end of the shadow screen, measuring along the bottom edge of the screen. Adjustment of the shadow meter light bracket may be necessary for perfect centering.
2. Remove the 5X4G rectifier tube from its socket and rotate coil until shadow reaches minimum width. This width must not exceed $\frac{1}{4}$ of an inch.
3. Replace the 5X4G rectifier tube in its socket. The shadow should then widen until it is not more than $\frac{1}{4}$ inch or less than $\frac{1}{4}$ inch from each side of the screen, measuring along the bottom edge. If these limits are not obtained readjust the shadow meter as given in paragraphs 1 and 2 until they are reached.

OUTPUT METER—The 025 Output Meter is connected between the plate and cathode prongs of one of the (6F6G) tubes. The meter is adjusted to use the (0-30) volt scale.

INTERMEDIATE FREQUENCY CIRCUIT

Frequency 470 K. C.

1. Connect the 068 Signal Generator output lead through a .1 mfd. condenser to the control grid of the 6A8G tube, and the ground connection of the output lead to the chassis. Turn the Volume Control to maximum volume position.

2. Set the range switch in position No. 1 (Broadcast), then rotate the tuning condenser of the receiver to approximately 580 K. C. and adjust the signal generator for 470 K. C.

3. Adjust compensators (425) 2nd I.F. Sec., (420) 2nd I.F. Pri., (41S) 1st I.F. Sec., and (41P) 1st I.F. Pri. for maximum reading on the output meter.

RADIO FREQUENCY CIRCUIT

Tuning Range (11.5) to (18.2) M. C.

1. Remove the signal generator output lead from the grid of the 6A8G tube and connect it through the .1 mfd. condenser to terminal No. 1 on aerial input panel and the generator ground lead to terminal No. 3, rear of chassis. Terminals 2 and 3 must be connected by the shorting link provided on the panel.

2. Set the range switch in position No. 5. Turn the receiver and signal generator dials to 18 M. C. Now adjust compensator (29D) by turning the screw (clockwise) to the maximum capacity position, then slowly turning it (counter-clockwise) until a second peak signal is reached on the output meter. The first peak from maximum capacity is the image signal and must not be used. NOTE—In adjusting some receivers only one peak will be observed, therefore, tune the compensator to maximum on this peak. If the above procedure is correctly performed, the image signal will be found at 17.06 M. C. by advancing the signal generator attenuator and turning the receiver dial to this frequency mark on the dial.

3. The antenna and R.F. compensators (7D) and (18D) are now adjusted by connecting a variable condenser of approximately 350 mmfd.—Philco Part No. 45-2225 across the oscillator compensator (29D) (First contact from left side of the receiver facing rear underside of chassis) and ground. Leaving the signal generator and receiver dials at 18 M. C., tune the added condenser from the maximum capacity point until the second harmonic of the receiver oscillator beats against the signal from the generator thereby bringing in the signal. The antenna and R. F.

compensators (7D) and (18D) are then adjusted for maximum output. Now remove the external condenser and readjust compensator (29D) as given in paragraph 2 above.

4. Turn signal generator and receiver dials to 12 M. C. and adjust compensator (29E) for maximum output. Then adjust compensators (19E) and (7E) for maximum output.

5. Now turn the signal generator and receiver dials to 18 M. C. and readjust compensators (29D) Osc., (7D) Ant. and (18D) R.F. as given in paragraphs 2 and 3 above.

Tuning Range (7.35) to (11.8) M. C.

1. Set range switch in position 4. Rotate signal generator and receiver dials to 11 M. C. Now adjust compensator (29B) by turning the screw (clockwise) to the maximum capacity position, then slowly turn it (counter-clockwise) until a second peak signal is reached on the output meter. The first peak from maximum capacity is the image signal and must not be used. NOTE—In adjusting some receivers only one peak will be observed, therefore, tune the compensator to maximum on this peak. If the above procedure is correctly performed, the image signal will be found at 10.06 M. C. by advancing the signal generator attenuator and turning receiver dial to this frequency mark on the dial.

2. Using the 11 M. C. signal, compensators (19B) R.F. and (7B) Ant. are adjusted by using the procedure given in paragraph 3, under tuning range (11.5) to (18.2) M. C. with the exception that the external condenser is connected across compensator (29B) (Third contact from left side of the receiver) and ground.

3. Remove the variable condenser and readjust compensator (29B) Osc. as given in paragraph 1 above.

4. Turn the signal generator and receiver dials to 7.5 M. C. and adjust compensators (29C) Osc. series, (19C) R.F. and (7C) Ant. for maximum output.

5. Due to the slight interaction of the high and low frequency compensators of this range, compensators (29B) Osc., (19B) R.F. and (7B) Ant. must be readjusted using the procedure in paragraphs 1 and 2 above.

Tuning Range (4.7) to (7.4) M. C.

1. Set range switch in Position 3. Turn signal generator and receiver dials to 7.0 M. C. Now adjust compensator (29) Osc., (19) R.F. and (7) Ant. for maximum output.

2. Turn the signal generator and receiver dials to 5.0 M. C. and adjust compensators (29A), (19A) and (7A) for maximum output.

3. Turn the signal generator and receiver dials to 7.0 M. C. and readjust compensators (29) Osc., (19) R.F. and (7) Ant. for maximum output.

Tuning Range (1.55) to (4.75) M. C.

1. Set the range switch in position 2. Turn the signal generator and receiver dials to 4.5 M. C. Now adjust compensators (27B) Osc., (18A) R.F. and (8A) Ant. for maximum output.

2. Rotate the signal generator and receiver dials to 1.7 M. C. Compensator (27C) Osc. series is now adjusted for maximum output as follows:

- First tune compensator (27C) for maximum output, then vary the tuning condenser of the receiver for maximum output about the 1.7 M. C. dial mark. Now turn compensator (27C) slightly to the right or left and vary the receiver tuning condenser for maximum output. If the output reading increases, turn compensator (27C) in the same direction a trifle more, and again vary the tuning condenser for maximum output. If the output decreases, set the compensator in the opposite direction. This procedure of first setting the compensator and then varying the tuning condenser is continued until there is no further gain in output reading.

4. Turn signal generator and receiver dials to 4.5 M. C. and readjust compensators (27B), (18A) and (8A) as given in Paragraphs 1 and 2 above.

Tuning Range (530) to (1000) K. C.

1. Set range switch in position No. 1 (Broadcast). Rotate the signal generator and receiver dials to 1500 K. C. Now adjust compensators (27) Osc., (18) R.F. and (8) Ant. for maximum output.

2. Tune signal generator and receiver dials to 580 K. C. Compensator (27A) Osc. series is then adjusted for maximum output as given in paragraph 3 under tuning range (1.55) to (4.75) M. C., the only difference in the procedure being in the frequency used.

3. Readjust compensator (27) for maximum output, by turning the signal generator and receiver dials to 1600 K. C.

4. Turn the signal generator and receiver dials to 1400 K. C. and adjust compensators (18) R.F. and (8) Ant. for maximum output.

New Fast-Selling Service Item

PHILCO FLEXIBLE WEATHERPROOF WINDOW-STRIP LEAD-IN
2 Wire Type—Part No. 45-2232—List Price \$0.35 Single Wire Type—Part No. 45-2233—List Price \$0.18

PHILCO PARTS & SERVICE DIVISION—Philadelphia, Pa.

Model 37-675—Codes 121-122

Electrical Specifications

Type of Circuit: Superheterodyne with Magnetic Tuning; Spread-band dial; Philco Foreign Tuning System, and a class "A" Audio Output Circuit. Code 122 receiver has the Philco Automatic Dial tuning system.

Power Supply: 115 Volts A.C. 50 to 60 cycles or 25 to 40 cycle. Power transformer Part Numbers for the different voltage and frequency ranges are listed on Page 5.

Power Consumption: 155 Watts.

Intermediate Frequency: 470 K.C.

Undistorted Output: 10 Watts.

Philco Tubes Used: Twelve (12)—3-6K7G; 3-6F6G; 1-6L7G; 1-6N7G; 1-6A8G; 1-6Q7G; 1-6H6G; 1-5X4G.

Tuning Ranges: Five—Range 1—530 to 1600 K.C.; Range 2—1.58 to 4.75 M.C.; Range 3—4.7 to 7.4 M.C.; Range 4—7.35 to 11.6 M.C.; Range 5—11.5 to 18.2 M.C.

Tone Control: Twin Tone Controls—

- A. Continuously variable treble control
- B. Three point variable bass compensation

Speaker: U-15.

Aerial Connections

To obtain the full advantage of the sensitivity of this receiver the Philco High Efficiency Aerial supplied with the receiver must be used. The connections for the aerial are as follows:

The red and black leads of the High-Efficiency Aerial "transmission line" are connected to terminals 1 and 2 respectively, of the terminal panel provided on the rear of the chassis. Connect the jumper on the terminal panel across terminals 3 and 4.

If a temporary aerial is used, the jumper should be across terminals 2 and 3. The aerial connects to terminal 1 and the ground lead to terminal 3. A good ground connection is desirable in all installations.

DIAL CALIBRATION

In order to adjust this receiver correctly the dial must be aligned to track properly with the tuning condenser. To do this proceed as follows:

1. Loosen the set screws on the shaft coupling of the tuning condenser. Then turn the tuning condenser until the plates are in the maximum capacity position. Now set the glowing beam indicator on the index line at the low frequency end of the broadcast band. With dial and tuning condenser in this position tighten set screws.

2. Turn the tuning condenser control until the indicator is on the first division from the index line.

3. With the dial in this position, loosen the shaft coupling set screws. Then turn the dial until the indicator is again on the index line. Tighten the set screws in this position.

NOTE: Be careful when turning the dial that the position of the tuning condenser is not disturbed.

REPLACING AUTOMATIC DIAL CONTROL SCREWS Code 122

See Bulletin 258 for the procedure on removal of the Automatic Dial Control screws.

REPLACING THE DIAL OR MASK ARM ASSEMBLY Code 122

To replace the dial or mask arm assembly, remove the chassis from the cabinet. Then remove the dial tuning knobs. Take off the control handle cover by removing the three screws holding it to the handle hub. When the metal cover is removed, two screws will be noted holding the control handle to the rotary hub. Remove the screws and detach the handle.

Now remove the five screws holding the dial escutcheon plate to the dial body and lift the escutcheon from the dial body. With these parts removed, the dial may be detached.

MASK ASSEMBLY—Code 122

With the dial removed, two fibre rings and one metal ring will be found around the outer side of the dial housing. Take off these rings and slip the mask from the housing.

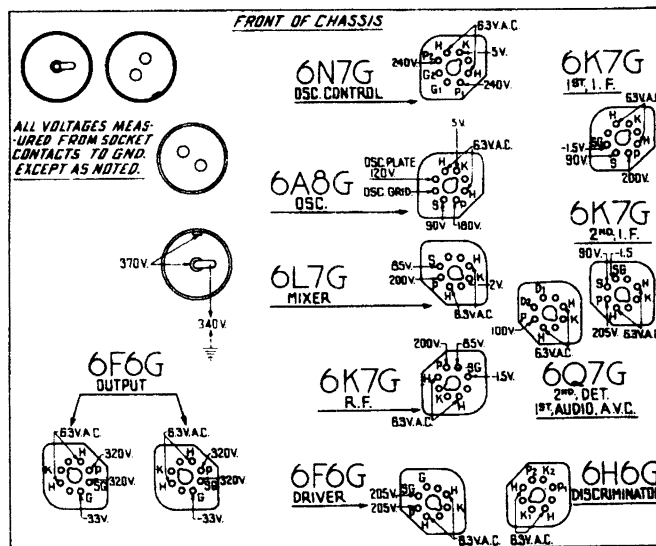


Fig. 1—Socket Voltages, Measured from Underside of Chassis
The voltages indicated by arrows were measured with a Philco #25 Circuit Tester which contains a voltmeter having a resistance of 1000 ohms per volt. Volume Control at minimum, range switch in broadcast position, line voltage 115 A. C.

SHADOWMETER ADJUSTMENT—Code 121

Remove aerial and allow tubes to warm up. Then adjust shadow meter as follows:

1. Move the shadow meter coil backwards and forwards, until the opposite edges of the shadow are $\frac{1}{8}$ of an inch from end of the shadow screen, measuring along the bottom edge of the screen. Adjustment of the shadow meter light bracket may be necessary for perfect centering.

2. Remove the rectifier tube from its socket, and rotate coil until shadow reaches minimum width. This width must not exceed $\frac{1}{32}$ of an inch.

3. Replace the 5X4G rectifier tube in its socket. The shadow should then widen to not more than $\frac{1}{16}$ inch or less than $\frac{1}{32}$ inch from each side of the screen measuring along the bottom edge. If these limits are not obtained readjust the shadow meter as given in paragraphs 1 and 2 until they are reached.

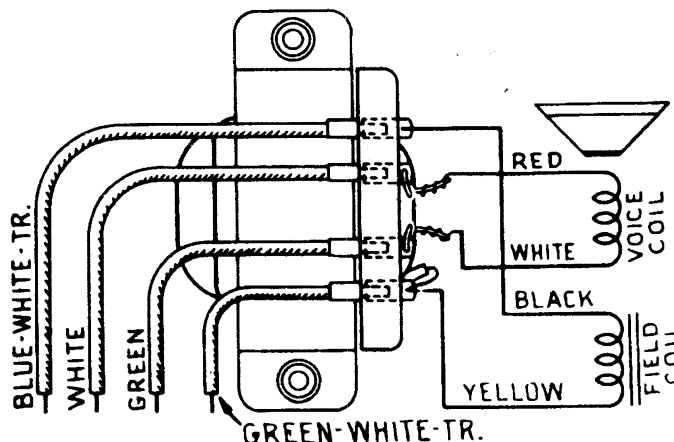


Fig. 2—U15 Speaker Wiring

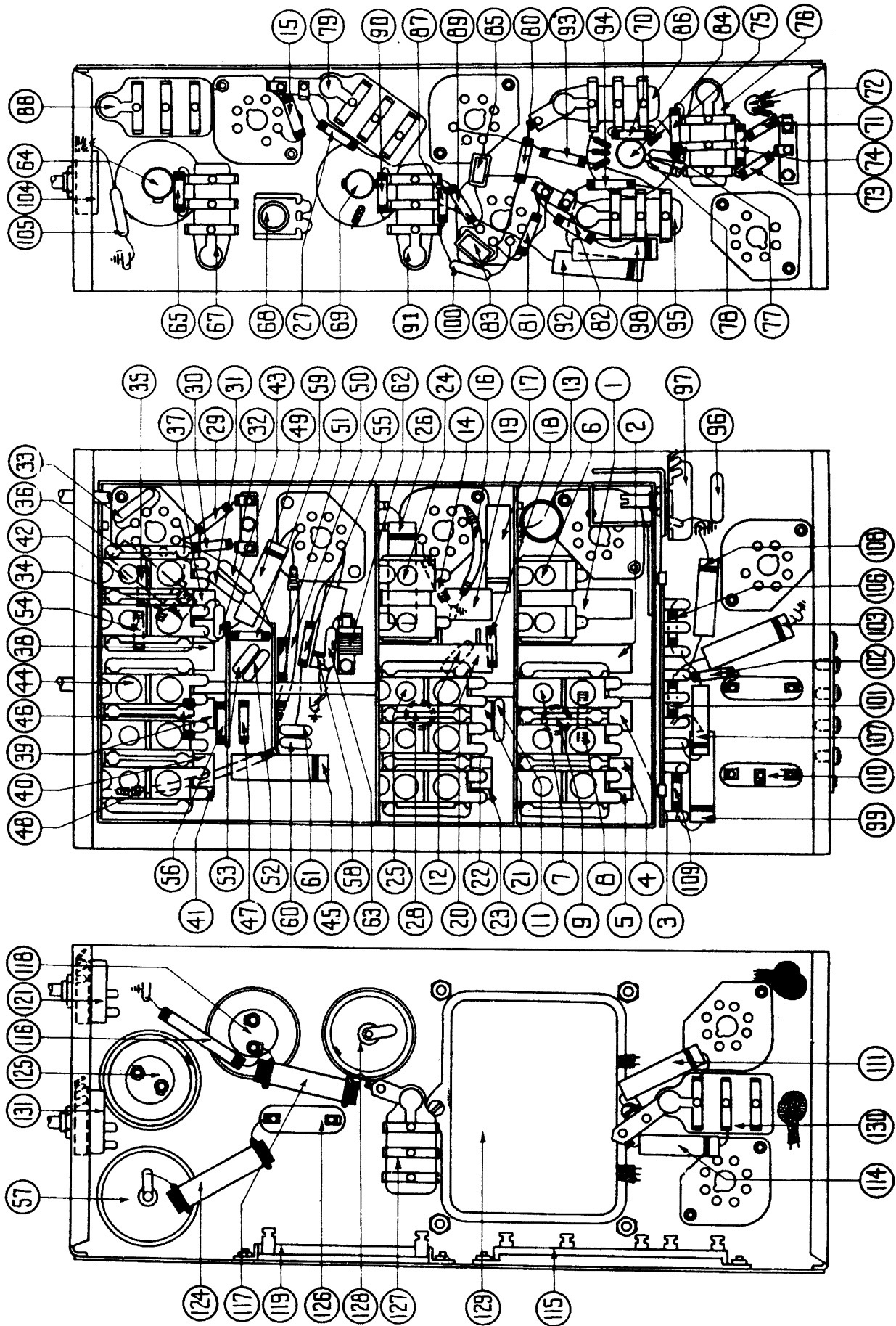
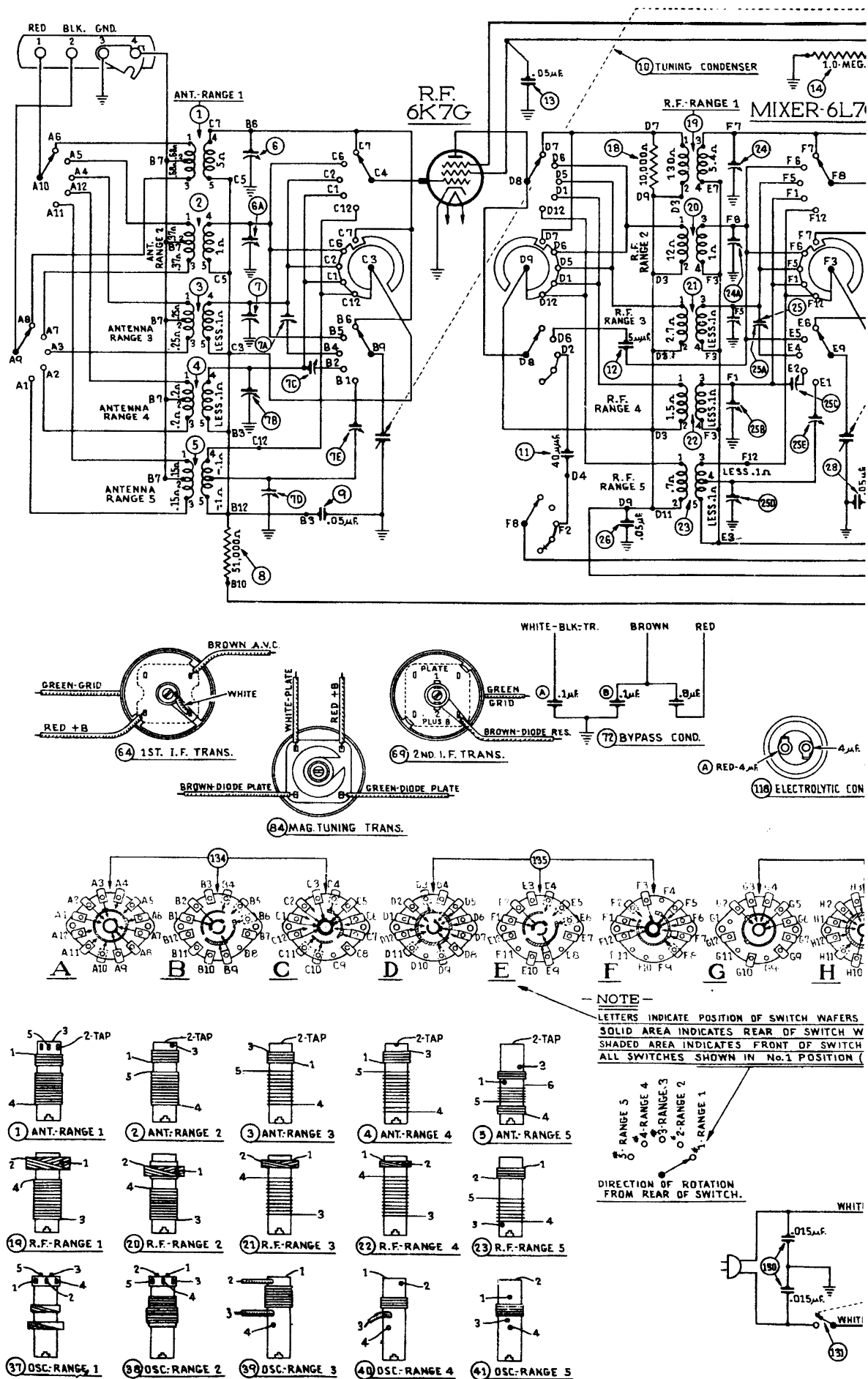
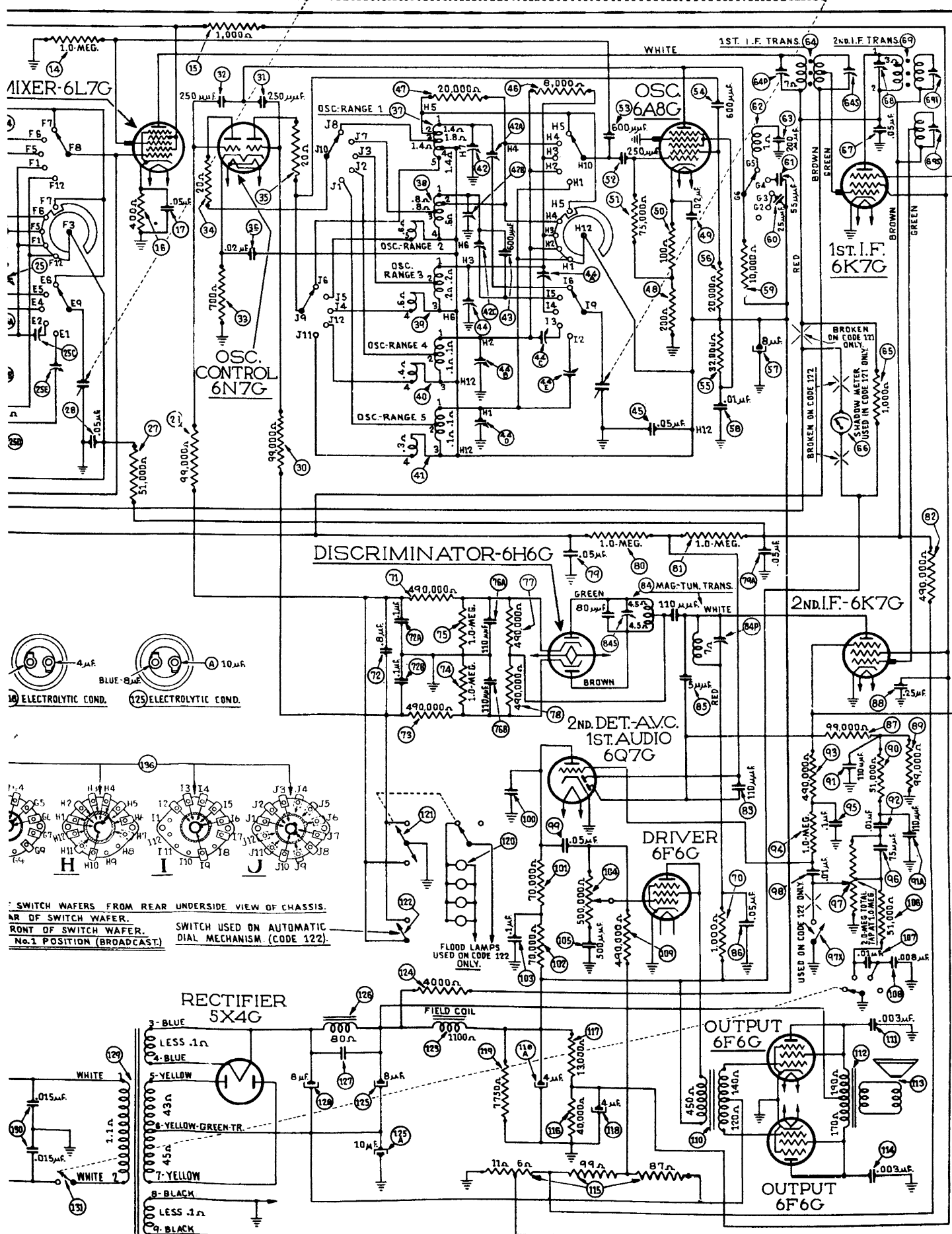


Fig. 3—Parts locations. Underside of Chassis

Model 37-675 — Codes 121-122

Fig. 4—Schematic Diagram





Alignment of the Compensators

To accurately adjust this receiver, precision test equipment is necessary. A signal generator such as the PHILCO MODEL 068 SIGNAL GENERATOR, covering from 110 to 20,000 K. C. is designed for adjusting the compensators at the various frequencies specified. A visual indication of the receiver output is also necessary to obtain correct adjustment of the compensators. PHILCO MODEL 025 CIRCUIT TESTER contains a sensitive output meter and is recommended for these adjustments.

Philco Fibre Handle Screw-driver No. 27-7059 completes the necessary equipment for these adjustments. The locations of the various compensators are shown in Figs. 5 and 6.

NOTE—The receiver should be allowed to heat for at least 15 minutes before adjusting the compensators.

OUTPUT METER

The 025 Output Meter is connected to the plate and cathode terminals of the 6F6G driver tube. Adjust the meter to use the (0-30) Volt Scale.

INTERMEDIATE FREQUENCY CIRCUIT

Frequency 470 K. C.

IMPORTANT—Before adjusting the compensators, calibrate tuning dial as given on Page 1.

1. Connect the 068 Signal Generator output lead in series with a 1 mfd. condenser to the grid of the 6K7G tube, 2nd I.F., and the ground connection of the output lead to the chassis.

2. Set the receiver volume control in the maximum position; tone control counter-clockwise; Magnetic Tuning Switch "Off" (counter-clockwise); range switch in position No. 1 (Broadcast); bass compensation switch on first tap from "off" position, and the receiver dial to approximately 580 K. C. Adjust the signal generator for 470 K. C.

3. Now adjust compensator (84P) for maximum output.

4. Remove the signal generator output lead with the .1 mfd. condenser from the 6K7G 2nd I.F. grid and connect them to the 6K7G, 1st I.F. grid.

5. Turn compensator (69T) clockwise until it is tight, then adjust compensators (68) and (69S) for maximum output. Now adjust compensator (69T) for maximum output. Caution: Do not adjust compensators (68) and (69S) unless compensator (69T) is turned to the extreme clockwise position.

6. Remove the signal generator output lead and condenser from the 6K7G, 1st I.F. tube and connect them to the grid of the 6L7G tube, 1st detector, and adjust compensators (64P) and (64S) for maximum output.

RADIO FREQUENCY CIRCUIT

Tuning Range 11.5-18.2 M. C.

1. The signal generator output lead with the .1 mfd. condenser, is connected to terminal No. 1 on the aerial input panel (rear of chassis) and the generator ground lead to terminal No. 3. Terminals 2 and 3 must be connected with the shorting link provided on the panel.

2. Set the magnetic tuning control in the "off" position. Set the range switch in position No. 5 (11.5 to 18.2 M. C.). Turn the receiver and signal generator dials to 18 M. C. and adjust the generator attenuator for a readable indication on the output meter. Now adjust compensator (44D) by turning the screw (clockwise) to the maximum capacity position, then slowly turn it counter-clockwise until a second maximum peak is reached on the output meter. The first peak from maximum capacity is the image signal and the receiver must not be adjusted to this signal. On some receivers, however, only one peak will be found, therefore, adjust compensator (44D) to this peak. If the above procedure is correctly performed, the image signal will be found at 17.06 M. C. by advancing the signal generator input, and turning the receiver dial to this frequency mark on the scale.

3. Leaving the signal generator and receiver dials at 18 M. C. the antenna and R. F. compensators (7D) and (25D) are now adjusted by connecting a variable condenser (Philco Part No. 45-2325) across the oscillator compensator (44D) contact (first contact from the left side of the receiver facing rear underside view of the chassis) and ground. Now tune the added condenser until the second harmonic of the receiver oscillator beats against the signal from the generator, resulting in a maximum indication on the output meter. Note: it may be necessary to increase the signal generator output to obtain a signal of sufficient strength for reading on the output meter. Compensators (7D) and (25D) are now adjusted for maximum output. After these adjustments, remove the external condenser and readjust compensator (44D) as given in paragraph 2 above.

4. Turn the signal generator and receiver dials to 12 M. C. and adjust compensators (44E), (25E) and (7E) for maximum output.

5. Readjust compensator (44D) as given in paragraph 2 above, for maximum output.

6. Readjust compensators (7D), (25D) and (44D) as given in paragraph 3 above. This readjustment is to correct any variation that the low frequency compensator may have caused in the high end of this range.

Tuning Range (7.35-11.6 M. C.)

1. Turn selector switch to Range 4. Set the signal generator and receiver dials to 11.0 M. C. Now adjust compensator (44B) for maximum output. Check for image at 10.06 M. C.

2. Leaving signal generator and receiver dial turned to 11.0 M. C., connect the external variable condenser across the oscillator compensator (44B) contact (third contact from left side of the receiver facing rear underside view of chassis) and ground. Tune the added condenser for maximum output, then adjust compensators (7B) and (25B) for maximum output. Remove the added condenser and adjust (44B) for maximum.

3. Turn the signal generator and receiver dials to 7.5 M. C. and adjust compensators (44C), (25C) and (7C) for maximum output.

4. Readjust compensator (44B) as given in paragraph 1 above.

5. Readjust compensators (7B), (25B) and (44B) as given in paragraph 2 above.

Tuning Range (4.7 to 7.4 M. C.)

1. Turn selector switch to range 3. Set the signal generator and receiver dials for 7.0 M. C. and adjust compensators (44), (25) and (7) for maximum output.

2. Rotate the signal generators and receiver dials to 5.0 M. C., then adjust compensators (44A), (25A) and (7A) for maximum output.

3. Readjust compensators (44), (25) and (7) on the 7.0 M. C. signal.

Tuning Range (1.58 to 4.75 M. C.)

1. Turn the selector switch to range 2. Set the signal generator and receiver dials to 4.5 M. C. Now adjust compensators (42B), (24A) and (6A) for maximum output.

2. Rotate the signal generator and receiver dials to 1.7 M. C. Compensator (42C) Osc. series is now adjusted for maximum output as follows: First tune compensator (42C) for maximum output, then vary the tuning condenser of the receiver for maximum output about the 1.7 M. C. dial mark. Now turn compensator (42C) slightly to the right or left and vary the receiver tuning condenser for maximum output. If the output reading increases, turn compensator (42C) in the same direction a trifle more, and again vary the tuning condenser for maximum output. If the output decreases, set the compensator in the opposite direction. This procedure of first setting the compensator and then varying the tuning condenser is continued until there is no further gain in output reading.

3. Readjust compensators (42B), (24A) and (6A) for maximum output as given in paragraph 1 above.

Tuning Range (530 to 1600 K. C.)

1. Set selector switch in range 1. Rotate the signal generator and receiver dial to 1500 K. C. Adjust compensators (42), (24) and (6) for maximum output.

2. Turn the signal generator and receiver dials to 580 K. C. Compensator (42A) Osc. series is now adjusted, using the same procedure as given in paragraph 2 under Tuning Range (1.58 to 4.75 M. C.). The only difference in the two adjustments is the frequency and compensator used.

3. Readjust compensator (42), on 1500 K. C. and compensators (24) and (6) on a 1400 K. C. signal.

ADJUSTMENT OF THE MAGNETIC TUNING CONTROL

1. Leaving the selector switch in position 1. Set the Magnetic tuning switch in the "out" position. Turn the signal generator and dial to 1000 K. C. then adjust the receiver dial for maximum output.

NOTE: It is very important to accurately adjust the receiver tuning condenser for peak output, also, adjust the signal generator attenuator to maximum output position.

2. Turn the (Magnetic Tuning Control) to the "on" position (clockwise). Compensator (84S) Sec. of magnetic tuning transformer is now adjusted for maximum output. If the indicator of the output meter goes off scale, turn the volume control of the receiver toward the minimum position until a readable indication is obtained.

3. The above adjustment is now checked for accuracy, by turning the magnetic tuning control "off". When this is done there should be no change in the tone of the received signal. If a change of tone or hiss develops, it indicates a shift in frequency and the adjustment must be made again.

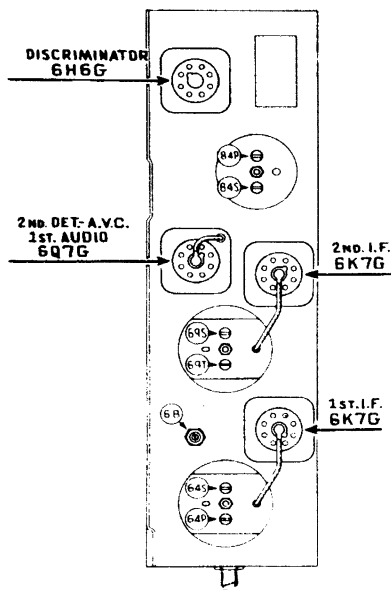


Fig. 5—Locations of I.F. Compensators
Top of I.F. Unit

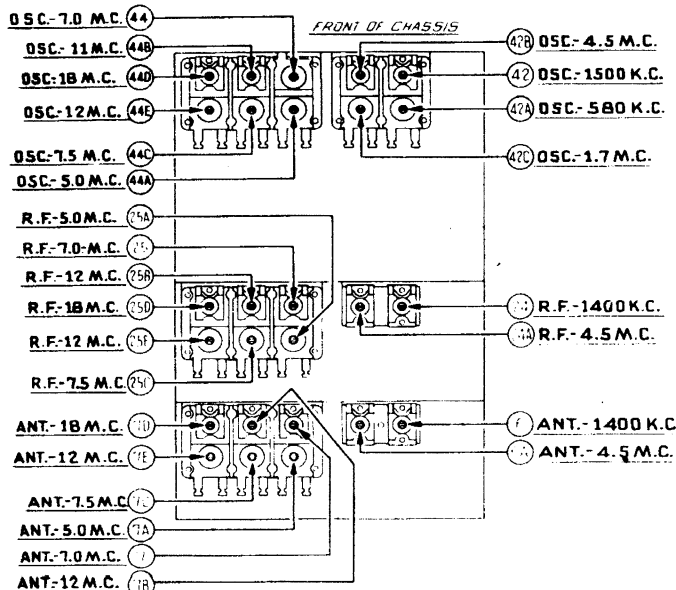


Fig. 6—Locations of R.F. Compensators
Underside of Chassis View

Replacement Parts—Model 37-675—Codes 121-122

Schem. No.	Description	Part No.	List Price	Schem. No.	Description	Part No.	List Price	Schem. No.	Description	Part No.	List Price
1	Antenna Transformer (Range 1)	32-2108	\$0.80	78	Resistor (490000 ohms 1/2 watt)	33-449339	\$0.20		Tube Shield Base	28-3898	\$0.03
2	Antenna Transformer (Range 2)	32-2146	.80	79	Condenser (.05 mfd. dual bakelite)	3615-DG	.40		Tube Shield (6N7G)	8005	.10
3	Antenna Transformer (Range 3)	32-2183	.60	80	Resistor (1.0 megohm 1/2 watt)	33-510339	.20		Tube Shield Base (6N7G)	8004	.03
4	Antenna Transformer (Range 4)	32-2185	.70	81	Resistor (1.0 megohm 1/2 watt)	33-510339	.20		Mtg. Grommet (R. F. Unit)	27-4317	.04
5	Antenna Transformer (Range 5)	32-2175	.80	82	Resistor (490000 ohms 1/2 watt)	33-449339	.20		Mtg. Sleeve (R. F. Unit)	28-2257	.01
6	Compensator (2 sections)	31-6093	.40	83	Condenser (110 mmfd. mica)	30-1031	.20		Mtg. Screw (R. F. Unit)	W-729	.45 C
7	Compensator (6 sections)	31-6112	1.40	84	Magnetic Tuning Transformer	32-2217	2.40		Mtg. Spacer (R. F. Unit) code 121	27-8339	.40 C
8	Resistor (51000 ohms 1/2 watt)	33-351339	.20	85	Condenser (5 mmfd. mica)	30-1083			Mtg. Spacer (R. F. Unit) code 122	27-7807	.50 C
9	Condenser (.05 mfd. tubular)	30-4020	.20	86	Condenser (.05 mfd. bakelite)	3615-SG	.35		Mtg. Washer	28-3927	.01
10	Tuning Condenser	31-1892	3.75	87	Resistor (99000 ohms 1/2 watt)	33-399339	.20		Mtg. Rubber (Tuning Condenser)	27-4325	.02
11	Condenser (40 mmfd. mica)	30-1076	.20	88	Condenser (.25 mfd. bakelite)	6287-DG	.40		Mtg. Rubber (Chassis)	3558	.03
12	Condenser (5 mmfd. mica)	30-1077	.20	89	Resistor (99000 ohms 1/2 watt)	33-399339	.20		Mtg. Bushing	27-4360	.04
13	Condenser (.05 mfd. tubular)	30-4123	.20	90	Resistor (51000 ohms 1/2 watt)	33-351339	.20		Mtg. Plate (R. F. Transformer)	28-3808	.02
14	Resistor (1 megohm 1/2 watt)	33-510339	.20	91	Condenser (110 mmfd. dual bakelite)	8035-DG	.25		Mtg. Spacer (R. F. Transformer)	27-8228	.01
15	Resistor (1000 ohms 1/2 watt)	33-210339	.20	92	Condenser (.01 mfd. tubular)	30-4124	.25		Mtg. Screw (R. F. Transformer)	W-1635	.30 C
16	Resistor (400 ohms wirewound)	33-3016	.20	93	Resistor (490000 ohms 1/2 watt)	33-449339	.25		Terminal Panel (Ant.)	38-7714	.15
17	Condenser (.05 mfd. tubular)	30-4444	.20	94	Resistor (1 megohm 1/2 watt)	33-510339	.25		Terminal Cover (Speaker)	38-3672	.15
18	Resistor (10000 ohms 1/2 watt)	33-310339	.20	95	Condenser (.1 mfd. bakelite)	4989-SG	.35		Knob (Tuning)	27-4330	.10
19	R. F. Transformer (Range 1)	32-2105	.75	96	Condenser (75 mmfd. mica)	30-1053	.20		Knob, Vernier	27-4331	.10
20	R. F. Transformer (Range 2)	32-2147	.60	97	Volume Control	33-5158	1.00		Knob, Tone & Volume	27-4332	.10
21	R. F. Transformer (Range 3)	32-2177	.60	97X	Ring & Contact Assem. (For shorting volume control Code 122 dial)	45-2350			Knob, Range Switch	27-4326	.10
22	R. F. Transformer (Range 4)	32-2178	.60	98	Condenser (.01 mfd. tubular)	30-4124	.25		Cable (Speaker)	41-3223	
23	R. F. Transformer (Range 5)	32-2176	.70	99	Condenser (.05 mfd. tubular)	30-4449	.20		A. C. Plug & Cord	L-2288	.40
24	Compensator (2 sections)	31-6093	.40	100	Condenser (110 mmfd. mica)	30-1031	.20		Fuses	45-2046	.05
25	Compensator (6 sections)	31-6113	1.40	101	Resistor (70000 ohms 1/2 watt)	33-370339	.20		Bottom Shield Plate	38-8143	
26	Condenser (.05 mfd. tubular)	30-4123	.20	102	Resistor (70000 ohms 1/2 watt)	33-370339	.20		Snap Fasteners	38-4279	.75 C
27	Resistor (51000 ohms 1/2 watt)	33-351339	.20	103	Condenser (.1 mfd. tubular)	30-4455	.25		Speaker (U-15)	36-1252	16.00
28	Condenser (.05 mfd. tubular)	30-4020	.20	104	Tone Control	33-5173			CODE 121		
29	Resistor (99000 ohms 1/2 watt)	33-399339	.20	105	Condenser (500 mmfd. mica)	30-1086			Dial	27-5349	.40
30	Resistor (99000 ohms 1/2 watt)	33-399339	.20	106	Resistor (51000 ohms 1/2 watt)	33-351339	.20		Hub	28-7187	.12
31	Condenser (250 pf. mica)	30-1032	.25	107	Condenser (.01 mfd. tubular)	30-4169	.20		Clamp	28-2837	.10
32	Condenser (250 pf. mica)	30-1032	.25	108	Condenser (.008 mfd. tubular)	30-4112	.30		Set Screw	W-1641	.02
33	Resistor (700 ohms wirewound)	33-170339	.20	109	Resistor (490000 ohms 1/2 watt)	33-449339	.20		Dial Screen Holder Assembly	31-1945	
34	Resistor (20 ohms 1/2 watt)	33-020339	.20	110	Transformer (Audio Input)	32-7057			Drive Mix Assembly	31-1901	1.80
35	Resistor (30 ohms 1/2 watt)	33-020339	.20	111	Condenser (.003 mfd. tubular)	30-4469	.20		Vernier Drive	31-1895	
36	Condenser (.02 mfd. tubular)	30-4481	.20	112	Output Transformer	32-7685	2.00		Gear (Dial)	28-7185	.10
37	Osc. Transformer (Range 1)	32-2191	.80	113	Cone-Voice Coil U-15	36-3631	1.75		Thrust Spring	28-8611	.01
38	Osc. Transformer (Range 2)	32-2194	.80	114	Condenser (.003 mfd. tubular)	30-4469	.20		Thrust Washer	28-3976	.30 C
39	Osc. Transformer (Range 3)	32-2197	.50	115	Resistor (203 ohms 3 tape wirewound)	33-3290	.60		"C" Washer	28-3904	.01
40	Osc. Transformer (Range 4)	32-2198	.50	116	Resistor (40000 ohms 1 watt)	33-340439	.20		Gear (Drive)	31-1884	.25
41	Osc. Transformer (Range 5)	32-2199	.50	117	Resistor (13000 ohms 2 watt)	33-313539	.30		Mask	27-5206	.30
42	Compensator (4 sections)	31-6124	1.00	118	Electrolytic Condenser (2 sections 4-4 mfd.)	30-2170	1.50		Mask Arm & Link Assembly	31-1899	.50
43	Condenser (600 mmfd. mica)	30-1049	.25	119	Resistor (7750 ohms wirewound)	33-3279	.55		Mask Washer	27-8318	.50 C
44	Compensator (6 section)	31-6117	1.20	120	Flood Lamp	34-2039	.07		Mask Guide & Bracket	38-7876	.25
45	Condenser (.05 mfd. tubular)	30-4123	.20	121	Magnetic Tuning Switch (Chassis)	42-1216	.75		Pilot Lamp Assembly	38-7909	.40
46	Resistor (8000 ohms 1/2 watt)	33-280339	.20	122	Magnetic Tuning Switch (Code 122 dial assembly)	45-2330			Bezel Frame & Plate Assembly	40-5948	.80
47	Resistor (20000 ohms 1/2 watt)	33-320339	.20			36-3162	8.00		Glaze	27-8300	.06
48	Resistor (200 ohms wirewound)	7217	.20			33-240539	.30		Ring	28-3988	.45
49	Condenser (.02 mfd. tubular)	30-4481	.20			30-2046	1.85		Gasket	27-8313	.01
50	Resistor (100 ohms wirewound)	33-3023	.25			32-7056	2.20		CODE 122		
51	Resistor (75000 ohms 1/2 watt)	33-375339	.20	123	Field Coil Assembly U-15	36-3162	8.00		Dial Escutcheon Assembly	45-2324	
52	Condenser (250 mmfd. mica)	30-1032	.25	124	Resistor (4000 ohms 2 watts)	33-240539	.30		Auto Dial Tuning Assembly Complete	31-1886	25.00
53	Condenser (600 mmfd. mica)	30-1049	.25	125	Electrolytic Condenser (2 sections 8-10 mfd.)	30-2046	1.85		Dial Scale	27-5207	.80
54	Condenser (600 mmfd. mica)	30-1049	.25			6287-DU	.40		Dial Screen Holder Assembly	31-1946	
55	Resistor (32000 ohms 1/2 watt)	33-323339	.20	126	Choke	30-2025	1.10		Gasket (Dial Scale)	27-8398	.01
56	Resistor (20000 ohms 1/2 watt)	33-320339	.20	127	Condenser (.15 mfd. dual bakelite)	32-7689	7.50		Mask & Link Assembly	45-2328	
57	Electrolytic Condenser (8 mfd.)	30-2024	1.10	128	Electrolytic Condenser (8 mfd.)	32-7700			Mask Guide	28-4118	.25
58	Condenser (.01 mfd. tubular)	30-4169	.20	129	Power Transformer 115 V. 50-60 cycles	32-7701			Ring (Retaining Mask Assembly)	28-7195	.20
59	Resistor (10000 ohms 1/2 watt)	33-310339	.20		Power Transformer 220 V. 50-60 cycles	32-7701			Spring (Retaining Mask Assembly)	28-8629	.04
60	Condenser (25 mmfd. mica)	30-1067	.20	130	Condenser (twin bakelite .015 mfd.)	3793-DG	.40		Control Screw	31-1898	
61	Condenser (55 mmfd. mica)	30-1045	.20	131	Base Compensation & A. C. Switch	42-1196	.75		Range Switch Shaft Coupling	28-7198	.15
62	Coil (6A8G plate)	32-2242	.25	132	Pilot Lamp (Dial)	34-2039	.07		Felt Washer	27-8399	.30 C
63	Condenser (200 mmfd. mica)	30-1047	.25	133	Shadowmeter Lamp (Code 121 only)	34-2039	.07		Washer	W-495	.30 C
64	1st I. F. Transformer	32-2209		134	Range Switch (Ant.)	42-1211	1.60		Snap Fastener	38-4279	.75 C
65	Resistor (1000 ohms 1/2 watt)	33-210339	.20	135	Range Switch (R. F.)	42-1212	1.60		Control Handle	45-2329	
66	Shadowmeter (Code 121 only)	45-2189	2.50	136	Range Switch (Osc.)	42-1217	2.00		Cover (Handle)	28-4077	.25
67	Condenser (.05 mfd. bakelite)	3615-SG	.35		Used on Code 121 and 122				Set Screws (Handle)	28-6493	.02
68	Compensator (Pri. 2nd I.F. Trans.)	31-6079			Brace (Drive Mtg.)	28-4119	.05		Screws (Cover)	W-1669	.40 C
69	2nd I. F. Transformer	32-2211			Coupling Assembly (drive)	31-1907	.45		Flood Lamp Assembly (single)	38-7937	
70	Resistor (1000 ohms 1/2 watt)	33-210339	.20		Shaft & Index Plate (Range Switch)	42-1208	.50		Pilot Lamp Assembly	38-8051	.35
71	Resistor (490000 ohms 1/2 watt)	33-449339	.20		Volume Control Shaft	38-8061			Bezel Assembly	40-5980	1.00
72	Condenser (1.1-1.8 mfd. metal case)	30-4470	1.40		Retaining Clip	28-4394	.01		Bezel Gasket	27-8517	
73	Resistor (490000 ohms 1/2 watt)	33-449339	.20		Spring	28-4117	.40 C		Screws	W-480	.55 C
74	Resistor (1 megohm 1/2 watt)	33-510339	.20		Socket (8 prong)	27-6058	.11		Station Tab Kit	40-6013	.90
75	Resistor (1 megohm 1/2 watt)	33-510339	.20		Socket (7 prong)	27-6057	.11		Insulator Ring and Contact Assembly	27-8351	
76	Condenser (110 mfd. dual bakelite)	8035-DG	.25		Socket (Power Transformer)	27-6061					
77	Resistor (490000 ohms 1/2 watt)	33-449339	.20		Tube Shield	28-2726	.10				

Figures in black type indicate circled figures in Base View. Prices Subject to Change Without Notice.

New REDUCED PRICES on PHILCO VIBRATORS

Now Only **\$4.25** List . . . (formerly \$5.00)

Part No. 41-3186 . . . For all Philco sets up to 1936

Part No. 41-3170 . . . For 1936 Philcos and most other makes



PHILCO RADIO & TELEVISION CORPORATION

Parts and Service Division

PHILCO

REG. U.S. PAT. OFF.

Essential Service Data on All Models

Model No.	Power Input (Watts)	I.F. (K.C.)	Tubes Used	†Tube Socket Voltages										
14 (Code 126 & 226) See Model 91				Circuit	R.F.	Det. Osc.	I.F.	A.V.C. 2nd Det.	1st A.F.	Driver (2nd A.F.)	Output (Class "A")		Rectifier	
				Type Tube	78	6A7	78	37	77	42	42	42	80	
				Filament Volts—F to F	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	5.0	
				Plate Volts—P to K	210	210	220	...	80	205	275	275	340	
14 (Code 122)	110	175	2-78, 1-6A7, 1-37, 1-77, 3-42, 1-80	Screen Grid Volts—SG to K (Type 6A7—G3-5 to K)	90	90	90	...	40	205	280	280	...	
				Control Grid Volts—CG to K (Type 6A7—G4 to K)	4	1	3.2	4	5	4	28	28	...	
				Cathode Volts—K to F	2.7	2.7	3.2	
				Type 6A7—G1 to K	...	30	
15	115	175	4-37, 3-44, 2-42, 1-80	Tube		Filament Volts F to F	Plate Volts P to K	Screen Grid Volts SG to K	Control Grid Volts CG to K	Cathode Volts K to F				
				Type	Circuit									
				44	R. F.	6.3	165	55	15	30				
				44	1st Det.	6.3	250	90	85	10				
16 All-Wave (& 500-501 Phonos) 540 K.C.—23 M.C.	130 (Code 122) 120 (Code 121)	460	1-76, 2-77, 3-78, 3-42, 1-37, 1-5Z3 (1-80 replaces 1-5Z3 in Code 121, 16-B)	37	Osc.	6.3	60	...	15	10				
				44	1st I. F.	6.3	250	90	85	10				
				44	2nd I. F.	6.3	275	90	3.3	10				
				37	Det.-Rect.	6.3	0	...	2	10				
				37	1st Audio	6.3	75	...	4	10				
				37	2nd Audio	6.3	100	...	2	10				
				42	P. P. Output	6.3	255	270	15	15				
				42	P. P. Output	6.3	255	270	15	15				
				80	Rectifier	5.0	320/Plate	...	...	...	
				CODE 122 ONLY										
				Circuit	1st Det.	Osc.	1st I.F.	2nd I.F.	2nd Det.	Inter-Station Noise Supr. Circuit	1st A.F.	2nd A.F. (Driver)	Output	Rectifier
				Type Tube	77	78	78	78	37	78	77	42	42	5-Z-3
Filament Volts—F to F	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	4.7				
Plate Volts—P to K	220	53	225	230	0	1.8	130	220	340	400				
Screen Grid Volts—SG to K	80	...	80	80	...	1.8	1.8	220	340	...				
Control Grid Volts—CG to K	1.6	6.4	0	0	2	1.6	4	6	34	...				
Cathode Volts—K to F	4.2	1.9	2.2	2.5	0	0	0	0	0	...				
16 (Code 125) 540 K.C.—22.5 M.C.	120	460	3-78, 2-77, 1-76, 1-37, 3-42, 1-80	Tube Function	78 R.F.	77 1st Det.	78 Osc.	78 1st I.F.	78 2nd I.F.	37 2nd Det.	77 1st Aud.	42 Driver	42 Out-put	80 Rect.
				Circuit										
				F to F	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	5.0	
				P to K	175	185	70	180	190	0	60	190	275 ca.	
16 (Code 126) 540 K.C.—22.5 M.C.	130	460	3-78, 2-77, 1-76, 1-37, 3-42, 1-5Z3	SG to K	65	62	...	65	65	...	48	190	275 ca.	
				K to Gnd.	2.4	4.8	5.4	2.3	2.5	0	0	0	0	
				Tube Function	78 R.F.	77 1st Det.	78 Osc.	78 1st I.F.	78 2nd I.F.	37 2nd Det.	77 1st Aud.	42 Driver	42 Out-put	80 Rect.
				Circuit										
17	130 (Code 122) 120 (Code 121)	175	1-6A7, 3-78, 2-37, 1-77, 3-42, 1-5Z3 (1-80 replaces 1-5Z3 in Code 121, 17B)	F to F	6.3	6.3	6.3	6.3	6.3	6.8	6.3	6.3	6.3	5.0
				P to K	210	220	75	215	215	0	70	215	330	
				SG to K	75	70	...	75	80	...	56	215	330	
				K to Gnd.	2.8	5.8	6.1	2.8	3.3	0	0	0	0	
CODE 122 ONLY														
Circuit	R.F.	1st Det. Osc.	I.F.	2nd Det.	A. V. C.	Inter-Station Noise Supr. Crt.	1st A.F.	Driver (2nd A.F.)	Output (Class A)	Rectifier				
Type Tube	78	6A7	78	37	37	78	77	42	42	5Z3				
Filament Volts—F to F	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	4.7				
Plate Volts—P to K	220	220	225	0	0	45	45	230	340	400				
Screen Grid Volts—SG to K (6A7-G3-5 to K)	75	58	75	—	—	50	50	230	340	...				
Control Grid Volts—CG to K (6A7-G4 to K)	Negligible	Negligible	3.7	.25	.25	.24	.24	.24	34	...				
Cathode Volts—K to F	0	0	3.7	0	11	0	0	0	0	...				
Type 6A7-G1 to K	22	...	...	...	...	...	...	...	...	...
Type 6A7-G2 to K	140	...	...	...	...	...	...	...	...	...

†Line Voltage 120. Readings made direct from tube sockets on underside of chassis, using test prods. and high resistance D. C. voltmeter for D. C. voltages; A. C. voltmeter for A. C. voltages. Volume control of set at maximum.

Model No.	Power Input (Watts)	I.F. (K.C.)	Tubes Used	†Tube Socket Voltages											
18 (Codes 121-2-3-4) (& 503 Phono.)	110	260	1-6A7, 2-78, 1-75, 3-42, 1-80	Circuit	R.F.	Det. Osc.	I.F.	2nd Det. & 1st A.F.	Driver (2nd A.F.)	Output (Class "A")		Rectifier			
				Type Tube	78	6A7	78	75	42	42	42	80			
				Filament Volts—F to F.	6.3	6.3	6.3	6.3	6.3	6.3	6.3	5.0			
				Plate Volts—P to K.	210	210	210	120	205	280	280	350			
				Screen Grid Volts—SG to K (Type 6A7—G3-5 to K)	80	80	80	...	200	300	300	...			
				Control Grid Volts—CG to K (Type 6A7—G4 to K)	.3	.15	5.3	.3	.35	28.	28.	...			
				Cathode Volts—K to F.	2.8	2.8	5.3	0	0	0	0	...			
				Type 6A7—G1 to K	...	35			
				Type 6A7—G2 to K	...	130			
				19 (Codes 121-126) (& 27 Phono.)	60	260	2-44, 1-36, 1-75, 1-42, 1-80	Circuit	R.F.	Det. Osc.	I.F.	2nd Det.	Output	Rectifier	
Type Tube	44	36	44					75	42	80					
Filament Volts—F to F.	6.3	6.3	6.3					6.3	6.3	6.3	5.0				
Plate Volts—P to K.	235	230	240					175	235	235	350/Plate				
Screen Grid Volts—SG to K	90	90	90					...	245	245	...				
Control Grid Volts—CG to K	.3	7.5	.3					.3	.15	...	...		
Cathode Volts—K to F.	3.5	7.8	3.5					...	14	...	...		
Diode Plate Volts—K to DP	...	...	...					2	...	...	...	
19 (Code 128)	70	260	2-44, 1-36, 1-75, 1-42, 1-80					Circuit	R.F.	Det. Osc.	I.F.	2nd Det.	Output	Rectifier	
								Type Tube	44	36	44	75	42	80	
				Filament Volts—F to F.	6.3	6.3	6.3	6.3	6.3	6.3	5.0				
				Plate Volts—P to K.	225	225	225	150	270	270	350/Plate				
				Screen Grid Volts—SG to K	100	100	100	...	290	290	...				
				Control Grid Volts—CG to K	.3	9.0	.3	.3	2.2	...	...		
				Cathode Volts—K to F.	4.4	9.5	4.4	...	...	...	...
				Diode Plate Volts—K to DP	...	...	...	2	...	...	...	
				20	75	1400 (Adj. Freq.)	3-24, 1-27, 2-71A, 1-80	Tube	Filament Voltage	Plate Voltage	Grid Voltage	Screen Grid Voltage	Cathode Voltage	Plate Milliamperes	
								Type	Circuit						
24	1st R. F.	2.2	225					2.8	82.0	10	3.0				
24	2d R. F.	2.2	130					2.8	82.0	10	3.0				
24	Detector	2.2	30					1.0	2.0	8	...				
27	1st Audio	2.3	115					...	...	7	3.0		
71-A	2d Audio	4.8	190					43.0	...	...	18.0		
71-A	Push-Pull	4.8	190					43.0	...	...	18.0		
80	Rectifier	4.8	...					...	...	...	36/Plate
28 A.C.—D.C. Two-band: 540-1720 K.C. 4.2-13. M.C.	50	460	1-6A7, 2-39/44, 1-75, 1-43, 1-25Z5					ON LINE VOLTAGE 120 A.C.							
				Type Tube	6A7	39-44	39-44	75	43	25Z5					
				Plate (P to K)	100	100	98	45	95	120					
				Screen Grid (SG to K)	(G1 = 8) (G2 = 80) (G3&5 = 60)	100	100	...	100	...					
				Total Filament Voltage—75.											
				ON LINE VOLTAGE 120 D.C.											
				Type Tube	6A7	39-44	39-44	75	43	25Z5					
				Plate (P to K)	95	95	85	40	90	...					
				Screen Grid (SG to K)	(G1 = 10) (G2 = 80) (G3&5 = 60)	95	95	...	95	...					
				Total Filament Voltage—83.											
29 Two-band: 540-1720 K.C. 4.2-13. M.C.	70	460	1-6A7, 2-39/44, 1-75, 1-42, 1-80	Function	Det. Osc.	1st I.F.	2nd I.F.	2nd Det.	Output	Rectifier					
				Type	6A7	33/44	39/44	75	42	80					
				Filament (F to F)	6.3	6.3	6.3	6.3	6.3	6.3	5.0				
				Plate (P to K)	210	200	200	200	300	300	310				
				Screen (SG to K)	80	80	80	...	315	...	...		
				Cathode (K to Gnd)	4.8	4.8	4.8	0	0	...	...		
				6A7 Grid G1 to K	35	...	...	...	...	...	...
				6A7 Grid G2 to K	170	...	...	...	...	...	...
				30 (Battery Operated)	See Table for Plate Current	Tuned R.F. 1200-1400 Adj. Freq.	3-32, 3-30, 2-31	Tube	Circuit	Filament Volts	Plate Volts	Grid Volts	Plate Current Milliamperes	Screen Grid Volts	
32	1st R.F.	2.0	150					...	.0015	60			
32	2nd R.F.	2.0	150					...	.0015	58			
32	3rd R.F.	2.0	150					...	.0015	58			
30	Detector Rectifier	2.0	...					...	...	...
30	Detector Amplifier	2.0	15					...	...	...		
30	1st Audio	2.0	90					*	.002	...					
31	2d Audio	2.0	150					24	.008	...					
31	Push-Pull	2.0	150					24	.008	...					
32 (32-volt D.C.)	50-70	260	1-36, 2-44, 1-75, 1-42, 1-84	LINE VOLTAGE 34 VOLTS											
				Circuit	R.F.	Det. Osc.	I.F.	A.F.	Output	Rect.					
				Type Tube	39/44	36	39/44	75	42	84					
				Filament Volts	6.8	6.8	6.8	6.8	6.8	6.8	6.8				
				Plate Volts	205	200	235	155	220	220	300				
				Screen Grid Volts (SG to K)	85	83	85	...	240	...	...		
				Cathode Volts (K to Gnd)	4	8.5	4	0	0	...	...		

†Line Voltage 120. Readings made direct from tube sockets on underside of chassis, using test prods, and high resistance D. C. voltmeter for D. C. voltages; A. C. voltmeter for A. C. voltages. Volume control of set at maximum. *4 Volts with Volume Control "off".

Model No.	Power Input (Watts)	I. F. (K.C.)	Tubes Used	†Tube Socket Voltages							
34 (Battery Operated) All-Wave 540 K.C.- 23 M.C.	Filament Current 750 M.A. Total Plate Current is from 16-19 M.A.	460	2-34, 2-30, 1-1C6, 1-32, 1-19 (34A uses also 1-1C1)	Circuit	Det.-Osc.	1st I.F.	2nd I.F.	2nd Det.	1st A.F.	Driver	Output
				Type Tubes	1C6	34	34	30	32	30	19
				Filament Volts.....	1.9 (P-135 G2-120)	1.9	1.9	1.9	1.9	1.9	1.9
				Plate Volts.....	135	135	135	...	40	135	135
				Screen Grid Volts.....	67½	67½	67½	...	35	...	...
35 (Battery Operated)	Plate Current 23 M.A.	260	3-30, 3-32, 1-33	Tube		Filament Volts	Plate Volts	Grid Volts	Plate Current Milliamperes	Screen Grid Volts	
				Type	Circuit						
				32	R.F.	1.9	133	...	3.0	60	
				32	1st Det.	1.9	133	...	3.0	63	
				30	Osc.	1.9	60	...	1.5	...	
				32	I.F.	1.9	133	...	3.5	60	
				30	2nd Det.	1.9	55	2.5	.05	...	
				30	1st Audio	1.9	65	...	.05	...	
				33	Output	1.9	125	7	12	135	
37 (Battery Operated)	Fil. Current 720 M.A. Plate Current 8-12 M.A.	175	1-15, 2-32, 1-30, 1-19, 1-No. 6 (ballast)	Tube		Filament Volts F to F	Plate Volts P to F	Screen Grid Volts SG to F	Control Grid Volts CG to F	Cathode Volts K to F	
				Type	Circuit						
				15	Det.-Osc.	1.9	120 (P to K)	60 (SG to K)	2.5 (CG to K)	5.5	
				32	I.F.	1.9	120	60	2.5	...	
				32	2nd Det.	1.9	2.0	45	2.5	...	
				30	1st Audio	1.9	110	...	.4	...	
				19	Output	2.0	120/Plate	...	.4/Grid	...	
38 (Battery Operated)	Fil. Cur. 720 M.A. Plate Cur. 8-12 M.A.	460	1-15, 2-32, 1-30, 1-19 (38A uses also 1-No. 6, ballast)	Circuit	Det.-Osc.	I.F.	2nd Det.	1st A.F.	Output		
				Type Tubes	15	32	32	30	19		
				Filament Volts—F to F.....	1.9 135	1.9	1.9	1.9	1.9		
				Plate Volts—P to F.....	(P to K) 67	135	40	135	135		
				Screen Grid Volts—SG to F....	(SG to K) 4	67	25	...	...
				Control Grid Volts—CG to F....	(CG to K) 5	.15	.15	.15	3 (To Gnd.)		
				Cathode Volts—K to F.....	5	...	...	...	...
38 (Code 123)	Fil. Cur. 720 M.A. Plate Cur. 8-12 M.A.	460	1-1A6, 2-32, 1-30, 1-19 (38A uses 1-1A1 ballast)	ALL VOLTAGES MEASURE TO GROUND OR -F							
					1A6	32 (I.F.)	32 (2nd Det.)	30	19		
				Plate.....	127 {G2-82 G3&5-64}	127	50	126	126		
				Screen Grid.....	G1-10	64	22	...	...
				Grid.....	...	...	...	...	{G1-2.9 G2-2.9		
39 (Battery Operated) Two-Band: 550-1720 K.C. 5.5-16.0 M.C.	Fil. Cur. 670 M.A. Plate Cur. 19 M.A.	460	1-1C6, 1-34, 2-30, 1-32, 1-19 (Model 39-A uses also 1 type 6 bal- last)								
					1C6	34	30	32	30	19	
				Plate	130	130	...	45	130	130	
				Screen Grid	66	66	...	30	...	...
				Osc. Plate	112	...	...	...	...	...	...
40, 41 & 42 (D.C.)	210	Tuned R.F. Adj. Freq. 1200-1400	3-24, 1-27, 2-71A	Tube		Filament	Plate	Screen Grid	Control Grid		
				Type	Circuit						
				24	1 R.F.	2.1	100	75	...	.4	
				24	2 R.F.	2.1	100	75	...	.4	
				24	Detector	2.1	45	15	...	1.8	
				27	1 A.F.	2.4	87	...	...	.2	
				71-A	2 A.F.	5	85	...	...	13	
				71-A	2 A.F.	5	85	...	...	13	
43 All-Wave (and 25) Phono.) 550 K.C.- 20 M.C.	Code 121 65 Code 221 88	460	4-44, 2-37, 1-42, 1-80	Tube		Filament Volts F to F	Plate Volts P to K	Screen Grid Volts SG to K	Control Grid Volts CG to K	Cathode Volts K to F	
				Type	Circuit						
				37	Osc.	6.3	175	80	6	...	
				36	1st Det.	6.3	235	80	3.0	12.9	
				44	1st I.F.	6.3	235	80	.2	3.0	
				44	2nd I.F.	6.3	235	80	3.5	3.5	
				37	2nd Det.	6.3	0	...	0	0	
				44	1st Audio	6.3	45	45	.2	2.0	
				42	Output	6.3	215	240	.4	15.0	
				80	Rectifier	5.0	350/Plate	...	...	...
44 All-Wave (and 504 Phono.) 530 K.C.- 23 M.C.	65	460	1-6A7, 2-78, 1-75, 1-42, 1-80	Circuit	Det.-Osc.	1st I.F.	2nd I.F.	2nd Det. and 1st A.F.	Output	Rectifier	
				Type Tubes	6A7	78	78	75	42	80	
				Filament Volts—F to F.....	6.3	6.3	6.3	6.3	6.3	5.0	
				Plate Volts—P to K.....	260	260	255	165	250	350	
				Screen Grid Volts—SG to K (Type 6A7—G3-5 to K).....	50 {G1-K= 20 G2-K=168}	85	85	...	260	...	
				Control Grid Volts—CG to K (Type 6A7—G-4 to K).....	.4	.4	.35	.2	.5	...	
				Cathode Volts—K to F.....	2.2	2.1	1.9	0	0	...	

†Line Voltage 120. Readings made direct from tube sockets on underside of chassis, using test prods, and high resistance D. C. voltmeter for D. C. voltages; A. C. voltmeter for A. C. voltages. Volume control of set at maximum.

Model No.	Power Input (Watts)	I.F. (K.C.)	Tubes Used	†Tube Socket Voltages										
45 Two-band: 540-1720 K.C. 4.2-13 M.C.	65	460	1-6A7, 2-39/44, 1-75, 1-42, 1-80	Circuit	Det.-Osc.	1st I.F.	2d I.F.	2d Det.	Output	Rect.				
				Type Tube	6A7	39/44	39/44	75	42	80				
				Filament (F to F).....	6 3	6 3	6 3	6 3	6 3	5 0				
				Plate (P to K).....	260	255	255	175	250	335				
				Screen Grid (SG to K)...	{G1-35 G2-135 G3&5-85}	75	75	...	260	...				
				Cathode (K to F).....	4 2	3 8	3 8	0	0	...				
46 D.C.	42	Tuned R.F. Adj. Freq. 1200-1400	3-14, 1-17, 2-71A, 1 No. 2 (ballast)	Tube		Filament Volts	Plate Volts	Grid Volts	Screen Grid Volts	Cathode Volts				
				Type	Circuit									
				14	R.F.	13.5	100	1.5	60	2.5				
				14	Det.	13.5	30	1 0	25	2.5				
				17	1st A.F.	13.5	100	.25	...	4.5				
				71-A 2	Output Ballast	4 5 8 0	90	15 5	...	...		
47 (D.C.)	45	260	1-36, 2-44, 3-37, 2-43	Tube		Filament Volts	Plate Volts	Screen Grid Volts	Control Grid Volts	Cathode Volts				
				Type	Circuit	F to F	P to K	SG to K	CG to K	K to F				
				44	R.F.	6 3	100	100	.4	40				
				36	Det.-Osc.	6 3	100	65	5 0	30				
				44	I.F.	6 3	100	100	.4	25				
				37	Det.-Rect.	6 3	0	...	.2	22		
				37	1st Audio	6 3	75	...	.4	2		
				37	2nd Audio	6 3	90	...	.4	10		
				43	{Push-Pull Output	25. 25.	110 110	112 112	10. 10.	80 80				
				4	Ballast (121) 230 Volts	110	...	...	...	...
				5	Ballast (221) 230 Volts	110	...	...	...	...
				48 (D.C.)	40	175	1-44, 2-36, 1-43, 1-No. 9 (ballast)	Tube		Filament Volts	Plate Volts	Screen Grid Volts	Control Grid Volts	Cathode Volts
								Type	Circuit	F to F	P to K	SG to K	CG to K	K to F
36	Det.-Osc.	6 3	100					55	3 0	.5				
44	I.F.	6 3	70					70	4 5	10				
36	2nd Det.	6 3	37					35	3 0	.5				
43	Output	25 0	100					105	.4	.4				
9	Ballast	50	...					...	...	...
49 (D.C.) Two-band 540-1720 K.C. 4.2-12 M.C.	50	260	1-6A7, 2-78, 1-85, 1-76, 2-43	Tube		Filament Volts	Plate Volts	Screen Grid Volts	Control Grid Volts	Cathode Volts				
				Type	Circuit	F to F	P to K	SG to K	CG to K	K to F				
				78	P F.	5 8	85	100	...	30				
				6A7	Det.-Osc.	5 7	90	{G3&5-K:65 G2 -K:80 G1 -K:12}	...	22				
				78	I.F.	6 3	90	100	...	15				
				85	2d Det.—1st A.F.	6 3	40	...	...	15		
				76	Driver	6 3	100	...	...	20		
				43	Output	2 6	100	105	...	60				
				43	Rect.	2 6	100	105	...	60				
				50	60	Tuned R.F. Adj. Freq. 1400	3-24, 1-47, 1-80	Tube		Filament Volts	Plate Volts	Screen Grid Volts	Control Grid Volts	Cathode Volts
Type	Circuit													
24	1st R.F.	2 4	245					90	2 5	3 0				
24	2nd R.F.	2 4	250					90	2 5	3 0				
24	Det.	2 4	100					42	8 0	8 0				
47 80	Output Rect.	2 4 5 0	175					190	1 0	...				
51 & 52 (& 24 Phono.)	60	175	2-24, 1-35, 1-47, 1-80	Tube		Filament Volts	Plate Volts	Screen Grid Volts	Control Grid Volts	Cathode Volts				
				Type	Circuit									
				24	Osc. & 1st Det.	2 2	220	85	9 0	9 0				
				35	I.F.	2 2	210	85	3 0	3 0				
				24	2nd Det.	2 2	75	54	5 2	5 2				
				47	Output	2 2	210	240	0 2	...				
				80	Rect.	5 0	240/Plate	...	...	...	
53 A.C.-D.C.	45	460	2-77, 1-43, 1-12Z3	115 VOLTS A.C.										
				Circuit	Det. Osc.	2nd Det.	Output	Rectifier						
				Type Tube	77	77	43	12Z3						
				Filament—Total 49.9 Volts A. C. ...	95	15	94	112						
				Plate Volts—P to K.....	94	34	102	...						
				Screen Grid Volts—SG to K.....	7	4	4	...						
				Control Grid Volts—CG to K.....	18	12	10	112						
				Cathode Volts—K to F.....	...	...	...	...		
				120 VOLTS D.C.										
				Circuit	Det. Osc.	2nd Det.	Output	Rectifier						
				Type Tube	77	77	43	12Z3						
				Filament—Total 51 Volts D. C.	95	14	94	10						
				Plate Volts—P to K.....	93	34	100	...						
				Screen Grid Volts—SG to K.....	8	3	4	...						
				Control Grid Volts—CG to K.....	7-14	6-12	3-26	58-73						
				Cathode Volts—K to F.....	...	...	...	...		

Model No.	Power Input (Watts)	I.F. (K.C.)	Tubes Used	†Tube Socket Voltages					
54 A.C.-D.C.	50	460	1-6A7, 1-78, 1-75, 1-43, 1-25Z-5	115 VOLTS A.C.					
				Circuit	Det. Osc.	I.F.	2nd Det.	Output	Rectifier
				Type Tube	6A7	78	75	43	25Z5
				Filament—Total 68 Plate Volts—P to K	84 K to G 3/5	84	38	84	146
				Screen Grid Volts—SG to K Control Grid Volts—CG to K Cathode Volts—K to F	65 .15 12	52 .15 12	.25 .10	90 .5 10	.........
57, 58 & 59	57 & 58: 46 59: 52	460	2-77, 1-42, 1-80	120 VOLTS D.C.					
				Circuit	Det. Osc.	I.F.	2nd Det.	Output	Rectifier
				Type Tube	6A7	78	75	43	25Z5
				Filament—Total 70 Plate Volts—P to K Screen Grid Volts—SG to K Control Grid Volts—CG to K Cathode Volts—K to F	90 70 .15 7.5	90 70 .15 7.5	40 .25 10	90 92 5 10	........
				Circuit	Det. Osc.	I.F.	2nd Det.	Output	Rectifier
60 (and 505 Phono.)	60	460	1-6A7, 1-78, 1-75, 1-42, 1-80	115 VOLTS A.C.					
				Circuit	Det. Osc.	I.F.	2nd Det.	Output	Rectifier
				Type Tube	6A7	78	75	42	80
				Filament Volts—F to F Plate Volts—P to K Screen Grid Volts—SG to K (6A7- G3-5 to K) Control Grid Volts—CG to K (6A7- G4 to K) Cathode Volts—K to F	6.3 235 110 10.5 25	6.3 45 35 .25 15	6.3 235 250 .25 15	6.3 235 250 .25 15	4.8 300
				Circuit	Det. Osc.	I.F.	2nd Det. and 1st A.F.	2nd A.F. (Output)	Rectifier
65	95	Tuned R.F. Adj. Freq. 1400	2-24, 1-27, 2-45, 1-80	115 VOLTS A.C.					
				Type	Circuit	Filament Volts	Plate Volts	Grid Volts	Cathode Volts
				24	R.F.	2.5	150	1.5	1.5
				27	Det.	2.5	250	28	28
				45	Output	2.5	250	50	...
66 (Two-band) 540-1720 K.C. 5.5-15.5 M.C.	60	460	1-6A7, 1-78, 1-75, 1-42, 1-80	115 VOLTS A.C.					
				Type	Circuit	Filament Volts	Plate Volts	Grid Volts	Cathode Volts
				24	R.F.	2.5	150	1.5	1.5
				27	Det.	2.5	250	28	28
				45	Output	2.5	250	50	...
70	80	260	4-24, 1-27, 1-47, 1-80	115 VOLTS A.C.					
				Type	Circuit	Filament Volts	Plate Volts	Grid Volts	Cathode Volts
				24	1st R.F.	2.25	250	85	3
				24	1st Det.	2.25	250	87	5.5
				27	Osc.	2.25	85	2	19.5
70 (A.V.C.)	80	260	3-35, 1-24, 1-27, 1-47, 1-80	115 VOLTS A.C.					
				Type	Circuit	Filament Volts	Plate Volts	Grid Volts	Cathode Volts
				35	R.F.	2.25	250	5	70
				24	Osc. & 1st Det.	2.25	250	8	12
				35	I.F.	2.25	250	20	70
71 (and 22 Phono.)	Code 121: 63 Code 221: 80	260	3-44, 1-36, 1-37, 1-42, 1-80	115 VOLTS A.C.					
				Type	Circuit	Filament Volts	Plate Volts	Grid Volts	Cathode Volts
				35	R.F.	6.3	245	90	4
				36	Det. Osc.	6.3	235	90	2.3
				44	I.F.	6.3	255	90	.2

Model No.	Power Input (Watts)	I.F. (K.C.)	Tubes Used	†Tube Socket Voltages										
76 77	105	Tuned R.F. Adj. Freq. 1400	3-24, 1-27, 2-45, 1-80	Tube		Filament Volts	Plate Volts	Screen Grid Volts	Control Grid Volts	Cathode Volts				
				Type	Circuit									
				24	1st R.F.	2.3	145	90	3	13				
				24	2d R.F.	2.3	145	90	3	13				
				24	Detector	2.3	36	30	1.4	12				
				27	1st A.F.	2.3	140	..	1	10				
				45	2d A.F.	2.2	230	..	46	..				
				45	2d A.F.	2.2	230	..	46	..				
80	Rectifier	4.5	...	..	..	..				
80	46	460	2-36, 1-42, 1-80	Tube		Filament Volts F to F	Plate Volts P to K	Screen Grid Volts SG to K	Control Grid Volts CG to K	Cathode Volts K to F				
				Type	Circuit									
				36	Det.-Osc.	6.3	245	165	6.4	8.4				
				38	2nd Det.	6.3	40	15	.4	0				
				42	Output	6.3	240	255	4	0				
				80	Rectifier	5.0	340/Plate	...	...	..	
				81	46	460	2-77, 1-42, 1-80	Circuit		Det. Osc.	2nd Det.	Output	Rectifier	
								Type Tube						
Filament Volts—F to K.....		6.3	6.3					6.3	5.0					
Plate Volts—P to K.....		240	75					240	425					
Screen Grid Volts—SG to K.....		85	40					250	...					
Control Grid Volts—CG to K.....		5.6	.6					2.3	...					
Cathode Volts—K to F.....		24.5	16					16.2	...					
84	43	460	2-77, 1-42, 1-80					Circuit		Det. Osc.	2nd Det.	2nd A.F. (Output)	Rectifier.	
				Type Tube										
				Filament Volts—F to F.....		6.3	6.3	6.3	5.0					
				Plate Volts—P to K.....		240	70	225	340					
				Screen Grid Volts—SG to K.....		95	23	225	...					
				86	70	“Neutrodyne Plus” Adj. Freq. 1200-1400	4-26, 1-27, 2-71A, 1-80	Tube		Filament Volts	Plate Volts	Grid Volts		
								Type	Circuit					
								26	R.F. & 1st A.F.	1.4	85	5.5		
27	Det.	2.2	30					..						
71-A	2d A.F.	4.6	172					41						
80	Rect.	4.6	...					...
87	95	“Neutrodyne Plus” Adj. Freq. 1200-1400	4-26, 1-27, 2-45, 1-80					Tube		Filament Volts	Plate Volts	Grid Volts		
								Type	Circuit					
				26	R.F. & 1st A.F.	1.5	90	6.0						
				27	Det.	2.5	30	..						
				45	2d A.F.	2.5	245	45						
				80	Rect.	5.0	...	...				
				89 (and 26 Phono.)	60	260	1-36, 2-44, 1-75, 1-42, 1-80	Same as Model 19 (First Type)						
								89 (Code 123)	60	260	2-44, 1-77, 1-75, 1-42, 1-80	Tube	44 R.F.	77 Det. Osc.	44 I.F.	75 A.F.	42 Output	80
Point P	235	230	240	175	235	350 A.C.								
SG	90	90	90	...	245	...								
K	3.5	7.8	3.5	0	0	...								
90 (1st type)	95	175	4-24, 2-27, 2-45, 1-80	Tube		Filament Volts	Plate Volts					Grid Volts	Screen Grid Volts	Cathode Volts
				Type	Circuit									
				24	1st R.F.	2.1	250					3.3	83	15
				27	Osc.	2.1	60					1	..	15
				24	1st Det.	2.1	250	5.5	23	15				
				24	1st I.F.	2.1	250	3.8	80	15				
				24	2nd Det.	2.1	48	3.7	42	15				
				27	1st Audio	2.1	140	.25	..	10				
45	Audio	2.2	243	46	..	..						
45	Audio	2.2	243	46	..	..						
80	Rect.	4.5	...	..	..	..				
90 Above Serial No. 237,001	95	175	3-24, 4-27, 1-47, 1-80	Tube		Filament Volts	Plate Volts	Screen Grid Volts	Control Grid Volts	Cathode Volts				
				Type	Circuit									
				24	R.F.	2.0	255	60	.25	20				
				27	Osc.	2.0	65	..	.6	20				
				24	1st Det.	2.0	250	64	6.0	24				
				24	I.F.	2.0	270	76	.25	18				
				27	Det. Rect.	2.0	0	..	0	17				
				27	Det. Amp.	2.0	140	..	.4	18				
				27	1st A.F.	2.0	45	..	.4	20				
				47	Output	2.0	220	240	1.0	..				
				80	Rectifier	4.5	...	...	...	..

†Line Voltage 120. Readings made direct from tube sockets on underside of chassis, using test prods, and high resistance D. C. voltmeter for D. C. voltages; A. C. voltmeter for A. C. voltages. Volume control of set at maximum.

Model No.	Power Input (Watts)	I.F. (K.C.)	Tubes Used	†Tube Socket Voltages										
90 Serial B32001-B35000 and above B53100	95	260	2-35, 1-24, 3-27, 2-47, 1-80	Tube		Filament Volts	Plate Volts	Control Grid Volts	Screen Grid Volts	Cathode Volts				
				Type	Circuit									
				35	R.F.	2.5	225	0	38	6				
				24	Det.-Osc.	2.5	215	12	40	22				
				35	I.F.	2.5	235	10	38	10				
				27	Det. Rect.	2.5	...	...	...	10	
				27	Det. Amp.	2.5	50	0	...	1.				
				27	1st Audio	2.5	90	0	...	1.				
				47	Output	2.5	210	10	225	...				
				47		2.5	210	10	225	...				
80	Rectifier	5.0	225/Plate	...		...	...			
91 (and 23 Phono.) Also 14 (Code 126 & 226)	Code 126 90 Code 226 95	260	2-44, 1-36, 3-37, 2-42, 1-80	Tube		Filament Volts	Plate Volts	Screen Grid Volts	Control Grid Volts	Cathode Volts				
				Type	Circuit									
				44	R.F.	6.3	200	50	6	25				
				36	Det.-Osc.	6.3	250	80	10	10				
				44	I.F.	6.3	250	85	2	5				
				37	Det. Rect.	6.3	0	...	2	2				
				37	Det. Amp.	6.3	60	...	2	2				
				37	Audio	6.3	100	...	0	2				
				42	Output	6.3	240	250	15	15				
				42	Output	6.3	240	250	15	15				
80	Rectifier	5.0	310/Plate	...	...	...					
95 and 96	115	Tuned R.F. Adj. Freq. 1400	3-24, 3-27, 2-45, 1-80	Tube		Filament Volts	Plate Volts	Screen Grid Volts	Control Grid Volts	Cathode Volts				
				Type	Circuit									
				24	R.F.	2.15	155	95	0	5.3				
				27	Det.	2.15	0	...	0.5	0.7				
				27	1st A.F.	2.15	27	...	0.5	5.5				
				27	2nd A.F.	2.15	85	...	2.0	5.5				
				45	Output	2.2	250	...	41	...				
				80	Rect.	4.5	...	...	...	...
				97 550-1750 K.C. 1.75-5.8 M.C. 5.8-18.0 M.C.	90	460	2-78, 1-6A7, 1-85, 2-42, 1-80	Tube	78 R.F.	6A7 Det. Osc.	78 I.F.	85 2nd Det.	42 Output	
								Point P	257	257	265	105	260	
SG	97	97	97					...	270					
K	2.3	2.6	3					...	...			
6A7:G ₁ = -14; G ₂ = 179.														
111 and 112 (Below Serial 174000)	105	175	4-24, 4-27, 2-45, 1-80	Tube		Filament Volts	Plate Volts	Screen Grid Volts	Control Grid Volts	Cathode Volts				
				Type	Circuit									
				24	1st R.F.	2.1	190	60	2	5				
				27	Osc.	2.1	45	...	7	7				
				24	1st Det.	2.1	180	62	4.6	8				
				24	1st I.F.	2.1	185	65	...	5				
				24	2nd I.F.	2.1	190	82	2.2	5				
				27	Det. Rect.	2.2	...	...	4	5		
				27	Det. Amp.	2.2	35	...	4	5				
				27	1st A.F.	2.1	95	...	1.2	5				
45	2nd A.F.	2.2	255	...	50	...								
45	2nd A.F.	2.2	255	...	50	...								
80	Rect.	4.9	255	...	...	...					
112 (Above Serial 174001)	105	175	4-24, 4-27, 2-47, 1-80	Tube		Filament Volts	Plate Volts	Screen Grid Volts	Control Grid Volts	Cathode Volts				
				Type	Circuit									
				24	1st R.F.	2.25	160	75	2	5.0				
				27	Osc.	2.25	55	...	6	7.5				
				24	1st Det.	2.25	160	75	2.5	8.0				
				24	1st I.F.	2.25	160	75	2	5.0				
				24	2nd I.F.	2.25	160	75	6	4.0				
				27	Det. Rect.	2.25	...	...	...	...
				27	Det. Amp.	2.25	20	...	...	4.0		
				27	1st A.F.	2.30	150	...	...	4.0		
47	2nd A.F.	2.30	245	255	16.5	...								
47	2nd A.F.	2.30	245	255	16.5	...								
80	Rect.	5.0	245	255	...	...						
116-B High Fidelity All-wave	100	460	3-78, 2-77, 1-76, 1-37, 3-42, 1-80	Tube	78 R.F.	77 1st Det.	76 Osc.	78 1st I.F.	78 2nd I.F.	37 2nd Det.	77 1st A.F.	42 Driver	42 Output	
				Point P	187	202	75	193	199	0	67	192	279	
				SG	74	74	...	74	74	...	52	192	279	
				K	1.8	5.4	5.0	1.8	5.1	
				80 Rect. Cathode—290V.										
				Tube		Filament Volts	Plate Volts	Screen Grid Volts	Control Grid Volts	Cathode Volts				
				24	1st R.F.	2.25	160	75	2	5.0				
				27	Osc.	2.25	55	...	6	7.5				
				24	1st Det.	2.25	160	75	2.5	8.0				
				24	1st I.F.	2.25	160	75	2	5.0				
116-X High Fidelity All-wave	135	460	3-78, 2-77, 1-76, 1-37, 1-42, 2-6A3, 1-5Z3	Tube	78 R.F.	77 1st Det.	76 Osc.	78 1st I.F.	78 2nd I.F.	37 2nd Det.	77 1st A.F.	42 Driver	6A3 Output	5Z3
				Point P	207	215	98	208	212	0	95	220	320	...
				SG	89	89	...	89	89	...	72	220	320	...
				K	2.2	5.2	5.2	2.1	6.4	0	340
				Tube		Filament Volts	Plate Volts	Screen Grid Volts	Control Grid Volts	Cathode Volts				
				24	1st R.F.	2.25	160	75	2	5.0				
				27	Osc.	2.25	55	...	6	7.5				
				24	1st Det.	2.25	160	75	2.5	8.0				
				24	1st I.F.	2.25	160	75	2	5.0				
				24	2nd I.F.	2.25	160	75	6	4.0				
118 Two-band (and 507 Phono.) 540-1720 K.C. 4.2-12 M.C.	110	260	1-6A7, 2-78, 1-75, 3-42, 1-80	Function		R.F.	Det.-Osc.	I.F.	A.F.	Driver	Output		Rect.	
				Type		78	6A7	78	75	42	42	42	80	
				Filament (F-F)		6.3	6.3	6.3	6.3	6.3	6.3	6.3	5.0	
				Plate (P-K)		180	180	200	125	195	280	280	315	
				Screen (SG-K)		80	175	80	...	195	290	290	...	
				Cathode (K to F)		2.5	2.6	3.2	0	0	0	0	...	
				6A7—G ₁ to K		26	
				6A7—G ₂ to K		150	
				Tube		Filament Volts	Plate Volts	Screen Grid Volts	Control Grid Volts	Cathode Volts				
				24	1st R.F.	2.25	160	75	2	5.0				
27	Osc.	2.25	55	...	6	7.5								
24	1st Det.	2.25	160	75	2.5	8.0								
24	1st I.F.	2.25	160	75	2	5.0								
24	2nd I.F.	2.25	160	75	6	4.0								
27	Det. Rect.	2.25	...	...	...	...				
27	Det. Amp.	2.25	20	...	...	...					
27	1st A.F.	2.30	150	...	...	...					
47	2nd A.F.	2.30	245	255	16.5	...								
47	2nd A.F.	2.30	245	255	16.5	...								
80	Rect.	5.0	245	255	...	...						

†Line Voltage 120. Readings made direct from tube sockets on underside of chassis, using test prods, and high resistance D. C. voltmeter for D. C. voltages; A. C. voltmeter for A. C. voltages. Volume control of set at maximum.

Model No.	Power Input (Watts)	I.F. (K.C.)	Tubes Used	†Tube Socket Voltages												
144 All-Wave (and 506 Phono.) 540 K.C.-23 M.C.	70	460	1-6A7, 2-78, 1-75, 1-42, 1-80	Circuit	Det.-Osc.	1st I.F.	2nd I.F.	A.F.	Output	Rectifier						
				Tube	6A7	78	78	75	42	80						
				Filament Volts (F-F)	6.3	6.3	6.3	6.3	6.3	5.0						
				Plate Volts (P-K)	250	230	230	185	300	350						
				Screen Grid Volts (SG-K)	60	75	75		310							
				Cathode Volts (K-Gnd)	1.4	2	2	0	0							
				6A7-G2 to K	160											
				6A7-G1 to K	20											
				200 High Fidelity	130	175	1-6A7, 3-78, 1-76, 1-37, 3-42, 1-5Z3	Circuit	R.F.	Det. Osc.	1st I.F.	2d I.F.	Shadow-meter Control	A.F.	Driver	Out-put	Rect.
Type Tube	78	6A7	78					78	37	75	42	42	5Z3			
Test Points																
F to F	6.3	6.3	6.3					6.3	6.3	6.3	6.3	6.3	5.0			
P to K	225	210 (G3&5-K)	210					220	63	110	225	335	350 to Gnd.			
SG to K	80	73	73					76			225	335				
K to Gnd.	3	8	8					4	0	0	0	0				
CG to K	0.2	0	0.2					4	0		0.2	35				
6A7-G1 to K	22.0															
6A7-G2 to K	90.0															
201 High Fidelity Two-Band: 540-1720 K.C. 4.2-12.0 M.C.	130	260	3-78, 1-6A7, 1-37, 1-75, 3-42, 1-5Z3		R.F. 78	Det.-Osc. 6A7	1st I.F. 78	2nd I.F. 78	Shadow-meter 37	2nd Det. 1st A.F. 75	Driver 42	Out-put 42				
				P-K	210	205 100	205	210	65	115	215	345				
				SG-K	120	(G1-K = 17) (G2-K = 145)	115	115			215	345				
				K-Gnd.	4.2	3.8	7.8	7.8	0	0	0	0				
				Tube		Filament	Plate	Screen	Control	Cathode						
				Type	Circuit	Volts	Volts	Grid Volts	Grid Volts	Volts						
				SHORT WAVE UNIT												
				27	Osc.	2.2	110		3.3	0						
24	Det.	2.2	24	24	5	0										
BROADCAST UNIT																
24	R.F.	2.4	255	50	3.5	25										
24	1st Det.	2.4	260	60	9	38										
27	Osc.	2.4	60		3.5	25										
24	I.F.	2.4	265	50	3	22										
24	2nd Det.	2.4	116	40	7	25										
47	Output	2.5	205	220	7											
80	Rectifier	4.5	260/Plate													
470 All-Wave 550 K.C. 19 M.C.	110	260	5-24, 2-27, 1-47, 1-80	Tube		Filament	Plate	Screen	Control	Cathode						
				Type	Circuit	Volts	Volts	Grid Volts	Grid Volts	Volts						
				SHORT WAVE UNIT												
				27	Osc.	2.2	110		3.3	0						
				24	1st Det.	2.2	24	24	5	0						
				BROADCAST UNIT												
				24	R.F.	2.1	220	50	6	15						
				27	Osc.	2.1	80		6	15						
				24	1st Det.	2.1	210	55	5	15						
24	I.F.	2.1	220	60	8	15										
27	Rect. Det.	2.1				14										
27	Amp. Det.	2.1	150		0	15										
27	1st Audio	2.1	150		2	15										
47	Output	2.4	205	220	7											
80	Rectifier	4.5	220/Plate													
490 All-Wave 550 K.C. 19 M.C.	125	260	4-24, 5-27, 1-47, 1-80	Tube		Filament	Plate	Screen	Control	Cathode						
				Type	Circuit	Volts	Volts	Grid Volts	Grid Volts	Volts						
				SHORT WAVE UNIT												
				27	Osc.	2.2	110		3.3	0						
				24	1st Det.	2.2	24	24	5	0						
				BROADCAST UNIT												
				24	R.F.	2.1	220	50	6	15						
				27	Osc.	2.1	80		6	15						
				24	1st Det.	2.1	210	55	5	15						
24	I.F.	2.1	220	60	8	15										
27	Rect. Det.	2.1				14										
27	Amp. Det.	2.1	150		0	15										
27	1st Audio	2.1	150		2	15										
47	Output	2.4	205	220	7											
80	Rectifier	4.5	220/Plate													
511	50	Neutrodyne Adj. Freq. 1200-1400	4-26, 1-27, 1-71A, 1-80	Tube		Filament	Plate	Grid								
				Type	Circuit	Volts	Volts	Volts								
				26	R.F. & 1st A.F.	1.62	98.0	6.0								
				27	Det.	2.65	38.0									
				71	Output	5.26	148.0									
				80	Rect.	5.26	375 A.C.	30 each plate								
				Point Tube→		6A7	77	41	80							
				F	6.3	6.3	6.3	5.0								
P	222	47	210													
SG	76	25	222													
K	1.4															
G2	157															
600 530-1800 K.C.	45	460	1-6A7, 1-77, 1-41, 1-80	Point Tube→		6A7	78	75	43	25Z5						
				F	6.3	6.3	6.3	25	25							
				P	102	102	40	97								
				SG	47	47		102								
				K	0.7	0.9		12.5								
				G2	94											
				602 (A.C.-D.C.) 530-1800 K.C.	55	460	1-6A7, 1-78, 1-75, 1-43, 1-25Z5	Point Tube→		6A7	78	75	43	25Z5		
								F	6.3	6.3	6.3	25	25			
P	102	102	40					97								
SG	47	47						102								
K	0.7	0.9						12.5								
G2	94															

Model No.	Power Input (Watts)	I.F. (K.C.)	Tubes Used	†Tube Socket Voltages				
610 540-1720 K.C. 2.3-2.5 M.C. 5.8-18.0 M.C.	55	460	1-6A7, 1-78, 1-75, 1-42, 1-80	Tube	6A7 Det. Osc.	78 I.F.	75 2nd Det.	42 Output
				Point SG K	255 85 2.3	250 85 2.5	145	238 255 ...
				6A7-G ₂ = 147				
611 (A.C.-D.C.) 540-1720 K.C. 2.3-2.5 M.C. 5.8-18.0 M.C.	50	460	1-6A7, 1-78, 1-75, 1-43, 1-25Z5	Tube	6A7 Det. Osc.	78 I.F.	75 2nd Det. A.F.	43 Output
				Point P SG K	106 55 0.8	102. 55 1.1	41 ... 0	101 106 12.5
620 540-1720 K.C. 1.75-5.8 M.C. 5.8-18.0 M.C.	65	460	1-6A7, 2-78, 1-75, 1-42, 1-80	Tube	78 R.F.	6A7 Det. Osc.	78 I.F.	75 2nd Det.
				Point P SG K	258 95 2.85	258 95 2.5	258 95 2.85	153
625				6A7-G ₂ = 173				
623 (Battery Operated) 540-1720 K.C. 2.3-2.5 M.C. 5.7-18.0 M.C.	Filament Current 670 M.A. Plate Current 19 M.A.	460	1-1C6, 1-34, 2-30, 1-32, 1-19 (Model 623-A uses 1 type 6 ballast tube)	Tube	1C6 Det.- Osc.	34 I. F.	30 2nd Det.- A.V.C.	32 1st A.F.
				Point P SG G Osc. Pl.	135 64 ... 106	135 64 0.2 ...	0 ... 0.1 ...	52 24
624 (6-volt battery) 530-1720 K.C. 2.3-2.5 M.C. 5.7-18.0 M.C.	1.5 Amps.	460	1-1C6, 1-1A4, 1-32, 2-30, 1-19	Point	1C8	1A4	30 2nd Det.	32
				Tube	1C8	1A4	30 2nd Det.	32
630 540-1720 K.C. 1.75-5.8 M.C. 5.8-18.0 M.C.	70	460	1-6A7, 2-78, 1-75, 1-42, 1-80	F.....	2	2	2	2
				P.....	150	150	50	2
635				SG.....	83	80	33	150
				G ₂	115	...	...	...
640 145-390 K.C. 540-1720 K.C. 2.3-2.5 M.C. 5.7-18.0 M.C.	85	460	1-6A7, 2-78, 1-85, 2-42, 1-80	Tube	78 R.F.	6A7 Det. Osc.	78 I.F.	75 2nd Det.
				Point P SG K	245 102 2.7	245 102 2.6	245 102 2.6	188
				6A7-G ₂ = 175				
640 145-390 K.C. 540-1720 K.C. 2.3-2.5 M.C. 5.7-18.0 M.C.	85	460	1-6A7, 2-78, 1-85, 2-42, 1-80	Tube	78 R.F.	6A7 Det. Osc.	78 I.F.	85 2nd Det.
				Point P SG K	71 91 2.1	240 91 2.2	242 91 2.3	102
				6A7-G ₂ = 102V. 80 Fil.—Gnd.: 300V.				

†Line Voltage 120. Readings made direct from tube sockets on underside of chassis, using test prods. and high resistance D. C. voltmeter for D. C. voltages; A. C. voltmeter for A. C. voltages. Volume control of set at maximum.

Model No.	Power Input (Watts)	I.F. (K.C.)	Tubes Used	†Tube Socket Voltages							
641 (D.C.) 530-1720 K.C. 2.2-2.6 M.C. 5.8-18.0 M.C.	40	460	2-78, 1-6A7, 1-76, 1-85, 2-43	Tube	78 R.F.	6A7 Det.-Osc.	78 I.F.	85 2nd Det.	76 A.F.	43 Output	
				Point P SG K Osc. Pl.	102 102 0 ...	102 56 0 86	93 102 1 ...	31 ... 0 ...	102 ... 0 ...	110 112 37 ...	
642 (32-volts D.C.) 540-1750 K.C. 1.75-5.8 M.C. 5.8-18.0 M.C.	43	460	1-78, 1-6A7, 1-76, 1-6F7, 1-85, 2-48	Tube	78 R.F.	6A7 1st Det.	76 Osc.	6F7 I.F. 1st A.F.	85 2nd Det. 2nd A.F.	48 Output	
				Point P SG K Osc. Pl.	32 32 1 ...	32 14.5 1 14.5	32 ... 1 ...	32 32 1.5 6.5	29 ... 1 ...	32 32 5.8 ...	
643 (Battery Operated) 150-390 K.C. 540-1720 K.C. 1.75-5.8 M.C. 5.8-18.0 M.C.	Fil. Cur. 750 M.A. Plate Cur. 22 M.A.	460	1-1C6, 2-34, 1-32, 2-30, 1-19 (Model 643-A uses 1 type 1C1 bal- last tube)	Tube	1C6 Det. Osc.	34 R.F.	34 I.F.	30 2nd Det.	32 1st A.F.	30 Driver 19 Output	
				Point P SG K G2	137 63 12 100	137 63	137 63	0	50 25	137 3 each	
645 540-1750 K.C. 1.75-5.8 M.C. 5.75- 18.0 M.C.	100	460	2-78, 1-6A7, 1-85, 2-42, 1-80	Point Tube→	78	6A7	78	85	42	80	
				F..... P..... SG..... K..... G2.....	6.3 245 90 (Sp=2.5) ...	6.3 243 90 158	6.3 258 90 (Sp=2.5) ...	6.3 82 (G1=5.3V)	6.3 240 256	5.0	
650 145-390 K.C. 540-1720 K.C. 2.3-2.5 M.C. 5.8-18.0 M.C.	98	460	2-78, 1-6A7, 1-75, 3-42, 1-80	Tube	78 R.F.	6A7 Det.-Osc.	78 I.F.	75 2nd Det.	42 Driver	42 Output	
				Point P SG K	55 90 2.2 6A7:G2 = 155	200 90 2.3	200 90 2.6	115	200 200 ...	300 200 ...	
651 (A.C.-D.C.) 540-1750 K.C. 1.75-5.8 M.C. 5.75- 18.0 M.C.	65	460	2-78, 1-6A7, 1-85, 1-76, 2-43, 1-25Z5	Point Tube→	6A7	78 R.F.	78 I.F.	85	76	43	25Z5
				F..... P..... SG..... K..... G2.....	6.3 98 57 1.4 88	6.3 98 98 1.5 ...	6.3 105 57 1.8 ...	6.3 35	6.3 86	6.3 102 104 17.5 ...	-25 113 ...
655 540-1750 K.C. 1.75-5.8 M.C. 5.75- 18.0 M.C.	100	460	2-78, 1-6A7, 1-75, 3-42, 1-80	Point Tube→	6A7	78 R.F.	78 I.F.	75	42 Driver	42 Output	80
				F..... P..... SG..... K..... G2.....	6.3 200 75 150	6.3 205 75 (Sp=1.2)	6.3 205 75 (Sp=1.2)	6.3 105	6.3 195 195 ...	6.3 290 290 (G1=30V)	5.0

†Line Voltage 120. Readings made direct from tube sockets on underside of chassis, using test prods, and high resistance D. C. voltmeter for D. C. voltages; A. C. voltmeter for A. C. voltages. Volume control of set at maximum.

Auto Radio Sets

Model No.	Power Input (Watts)	I.F. (K.C.)	Tubes Used	†Tube Socket Voltages
3 (Trans.)		Tuned R.F. 1000-1200 (Adj. Freq.)	3-24, 2-01A, 2-71A	*
5 (Trans.)		460	1-6A7, 1-78, 1-75, 1-41, 1-84	*
6 (Trans.) 6F		260	3-36, 1-85, 1-41 3-36, 1-85, 1-41, 1-84	*
7 (Trans.) 1st type 2d type		175	3-36, 2-38 3-36, 1-38, 1-41	*
8 (Trans.)		175	3-36, 1-38, 2-41	*
9 (Trans.) 9F		260	3-36, 1-85, 1-37, 1-79 3-36, 1-85, 1-37, 1-79, 1-84	*
10 (Trans.)		260	2-39/44, 1-6A7, 1-75, 1-42, 1-84	*
11 (Trans.) 1st type 2d type		260	2-44, 1-77, 1-75, 1-42, 1-84	*
12 (Trans.) Code 121 Code 122		175	3-36, 1-38, 1-41	*
700 (Trans.)		260	2-44, 1-77, 1-75, 1-42, 1-84	*
800 (Trans.)		260	2-39/44, 1-6A7, 1-75, 1-37, 1-79, 1-84	*
802		260	2-39/44, 1-6A7, 1-75, 1-37, 1-79 1-84	*
805		260	1-6A7, 1-41, 1-75, 1-78, 1-84	*

*Voltages not given for auto radio mode's due to voltage variations.

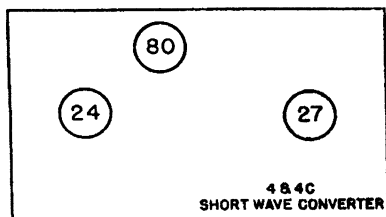
†Line Voltage 120. Readings made direct from tube sockets on underside of chassis, using test prods, and high resistance D. C. voltmeter for D. C. voltages; A. C. voltmeter for A. C. voltages. Volume control of set at maximum.

Model No.	Power Input (Watts)	I.F. (K.C.)	Tubes Used	†Tube Socket Voltages
806	—	260	1-6A7, 1-41, 1-75, 2-78, 1-84	*
808	—	260	1-6A6, 1-6A7, 1-75, 1-76, 1-77, 1-78, 1-84	*
809	—	260	1-6A7, 1-41, 1-75, 2-78, 1-84	*
816	...	260	1-6A7, 2-78, 1-75, 1-41, 1-84	*
817	...	260	1-6A7, 2-78, 1-75, 1-41, 1-84	*
818	...	260	1-6A7, 2-78, 1-75, 1-41, 1-84	*
819	...	260	1-6A7, 2-78, 1-75, 2-41, 1-84	*

*Voltages not given for auto radio models due to voltage variations.

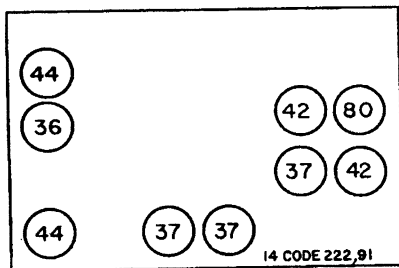
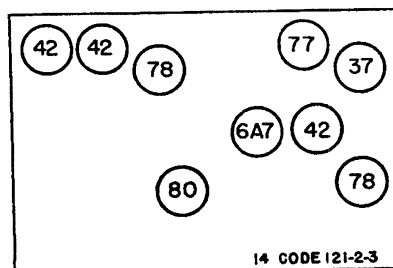
†Line Voltage 120. Readings made direct from tube sockets on underside of chassis, using test prods, and high resistance D. C. voltmeter for D. C. voltages; A. C. voltmeter for A. C. voltages. Volume control of set at maximum.

SOCKET LAYOUTS.....PHILCO MODELS 4-15



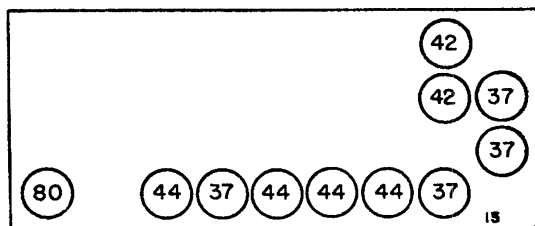
← **MODEL 4**
(Short Wave Converter)

MODEL 14 →
Code 121
Code 122
Code 123

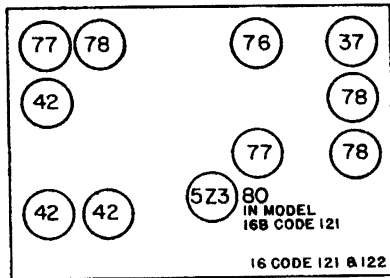


← **MODEL 14**
Code 221
Code 222
← **MODEL 91**
← **MODEL 23**

MODEL 15 →

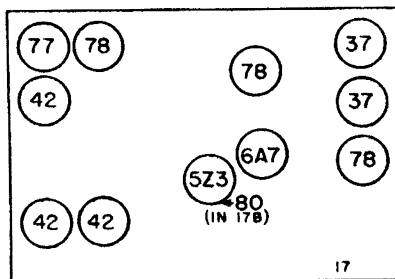
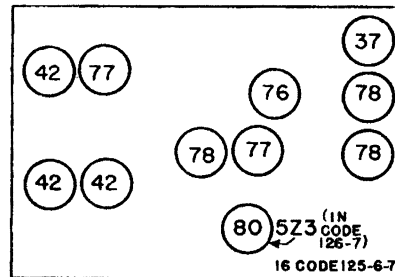


SOCKET LAYOUTS.....PHILCO MODELS 16—18



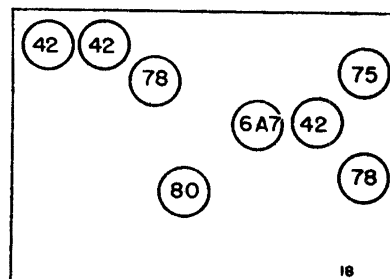
← MODEL 16
Code 121
Code 122
Code 123
← MODELS 500 & 501
Code 121

MODEL 16 →
Code 125
Code 126
Code 127
MODELS 500 & 501 →
Code 122

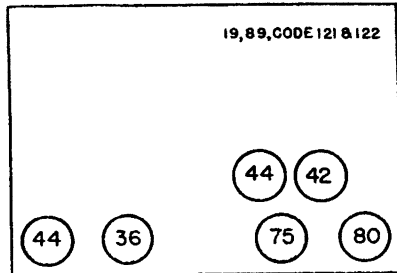


← MODEL 17

MODEL 18 →
MODEL 118 →
MODEL 503 →
MODEL 507 →

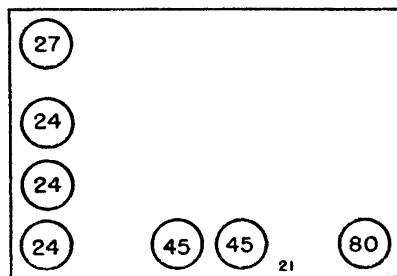
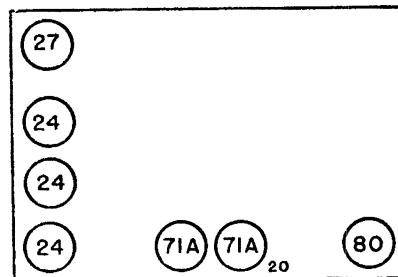


SOCKET LAYOUTS.....PHILCO MODELS 19—28



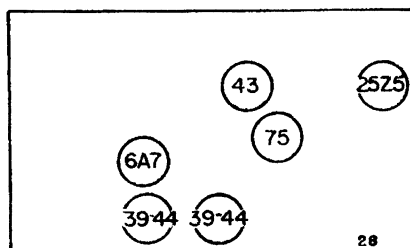
- ← MODEL 19
- ← MODEL 89
- Code 121
- Code 122
- ← MODEL 26
- ← MODEL 27

MODEL 20 →
MODEL 220 →

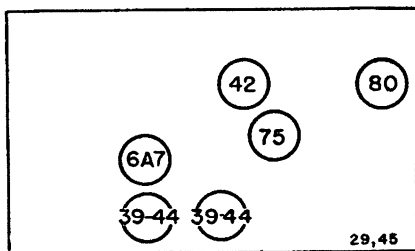


← MODEL 21

MODEL 28 →

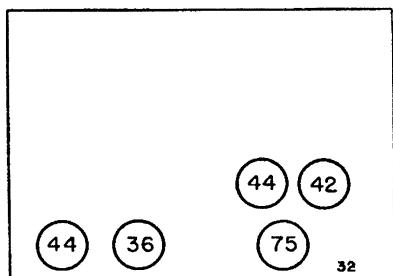
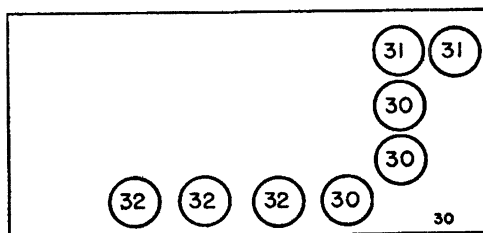


SOCKET LAYOUTS.....PHILCO MODELS 29—34



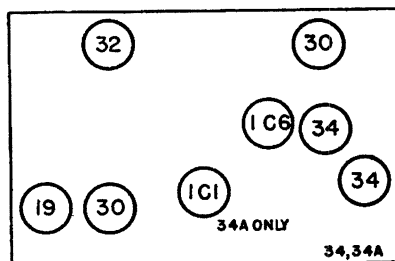
← MODEL 29
← MODEL 45

MODEL 30 →

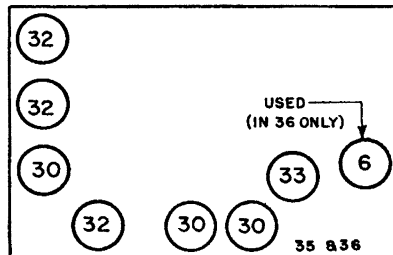


← MODEL 32

MODEL 34 →
MODEL 34A →

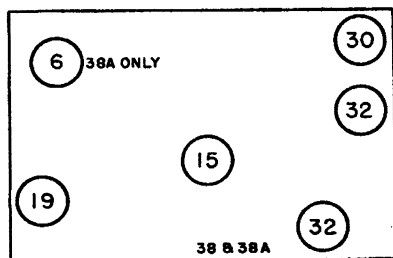
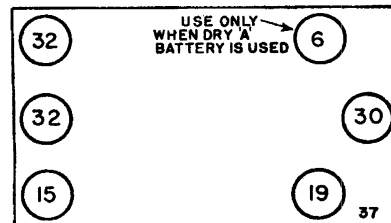


SOCKET LAYOUTS.....PHILCO MODELS 35—38A



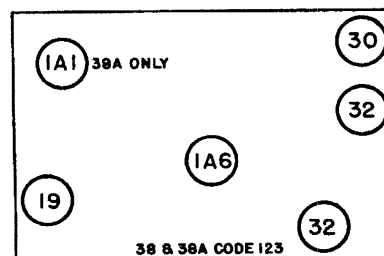
← MODEL 35
← MODEL 36

MODEL 37 →

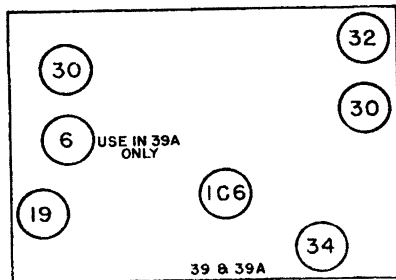


← MODEL 38
← MODEL 38A

MODEL 38 →
MODEL 38A →
both Code 123

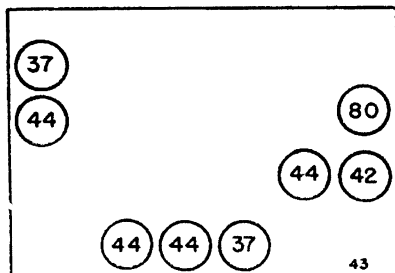
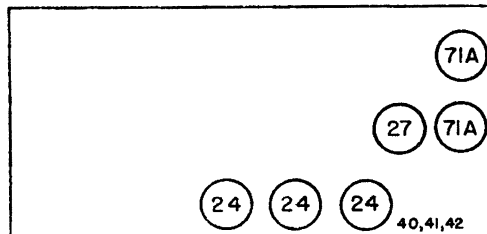


SOCKET LAYOUTS.....PHILCO MODELS 39—44



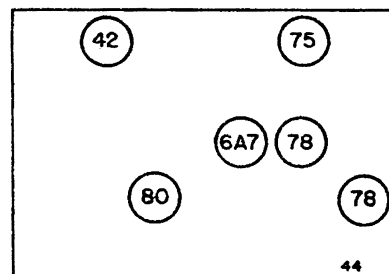
← MODEL 39
← MODEL 39A

MODEL 40 →
MODEL 41 →
MODEL 42 →

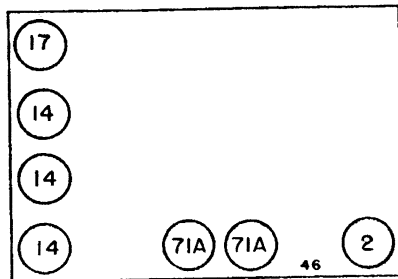


← MODEL 43
← MODEL 25

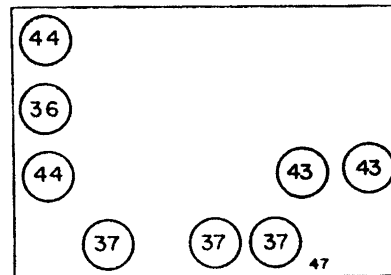
MODEL 44 →
MODEL 144 →
MODEL 504 →
MODEL 506 →



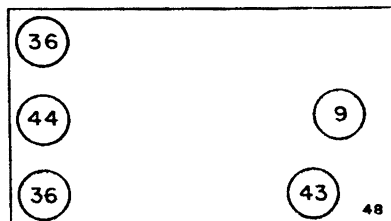
SOCKET LAYOUTS..... PHILCO MODELS 46—49



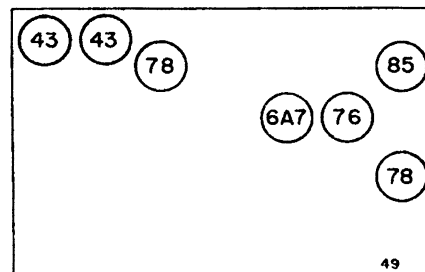
← **MODEL 46**



MODEL 47 →

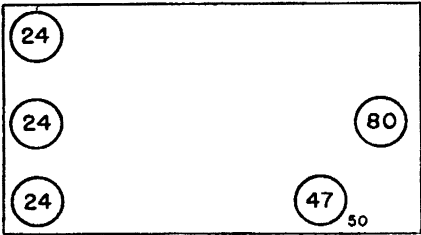


← **MODEL 48**



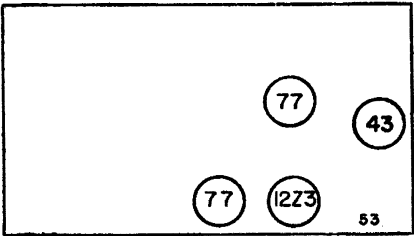
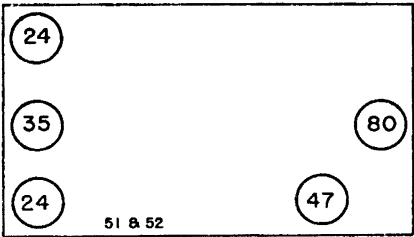
MODEL 49 →

SOCKET LAYOUTS.....PHILCO MODELS 50—54



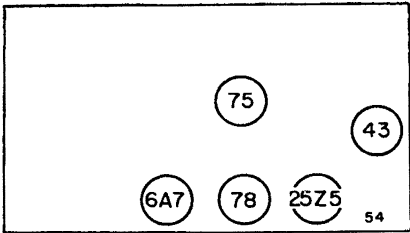
← MODEL 50

- MODEL 51 →
- MODEL 52 →
- MODEL 24 →
- MODEL 551 →

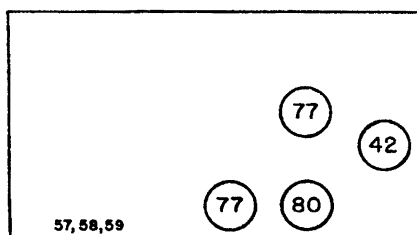


← MODEL 53

MODEL 54 →

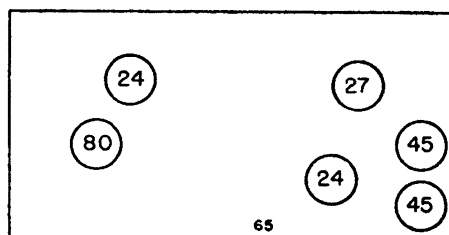
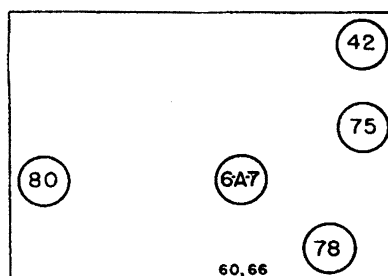


SOCKET LAYOUTS.....PHILCO MODELS 57—70



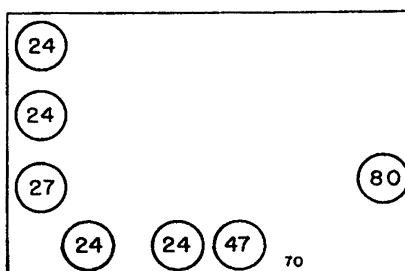
← MODEL 57
 ← MODEL 58
 ← MODEL 59

MODEL 60 →
 MODEL 66 →
 MODEL 505 →

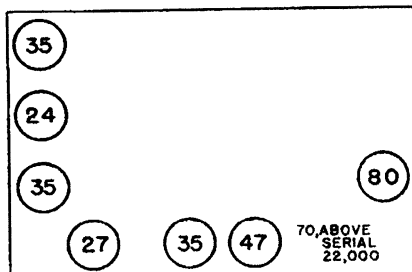


← MODEL 65

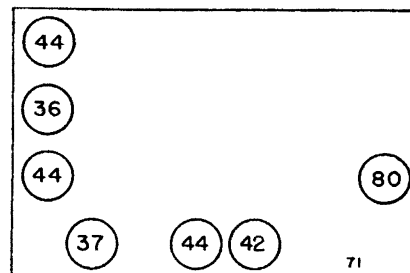
MODEL 70 →
 (below serial 22,000)
 MODEL 270 →
 MODEL 370 →
 MODEL 570 →



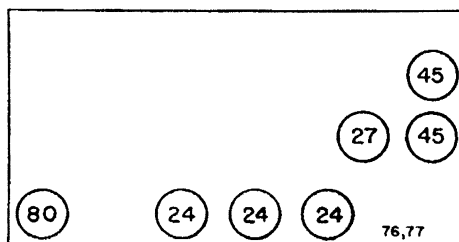
SOCKET LAYOUTS. PHILCO MODELS 70—80



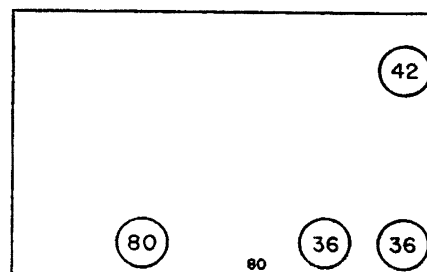
← **MODEL 70**
(above serial 22,000)



MODEL 71 →
MODEL 22 →

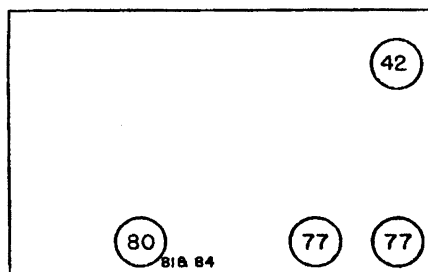


← **MODEL 76**
← **MODEL 77**



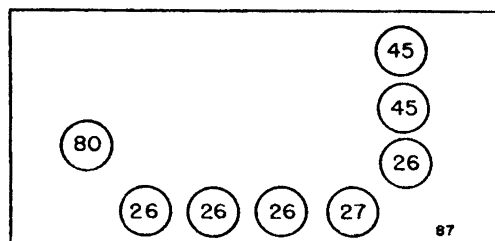
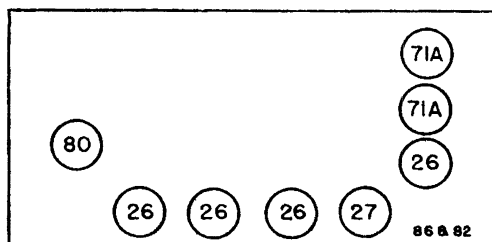
MODEL 80 →

SOCKET LAYOUTS.....PHILCO MODELS 81—89



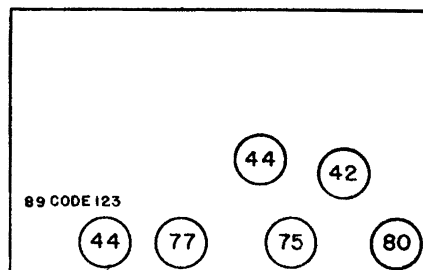
← MODEL 81
 ← MODEL 84
 ← MODEL 37-84
 Code 121

MODEL 86 →

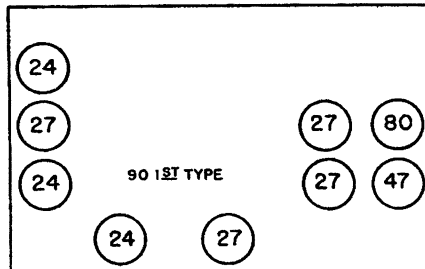


← MODEL 87

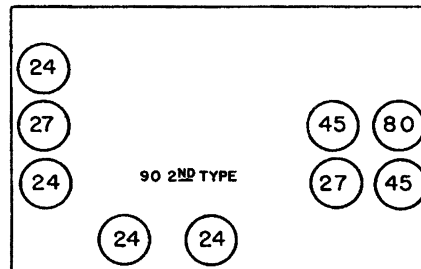
MODEL 89 →
 Code 123



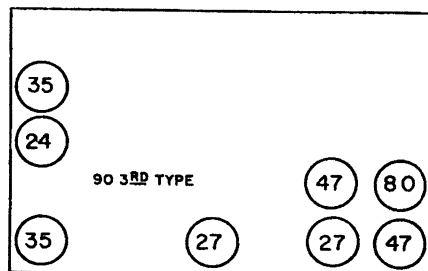
SOCKET LAYOUTS.....PHILCO MODELS 90—96



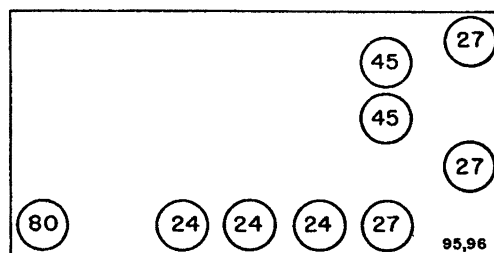
← **MODEL 90**
(below serial 237,001)



MODEL 90 →
(237,001—353,099)

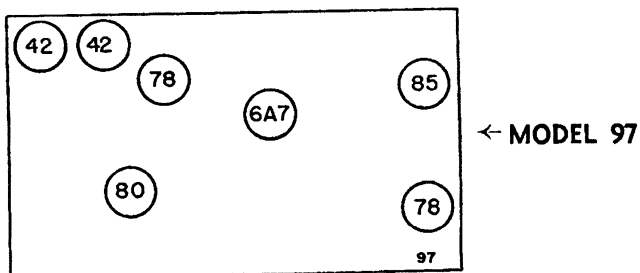


← **MODEL 90**
(above serial 353,100)

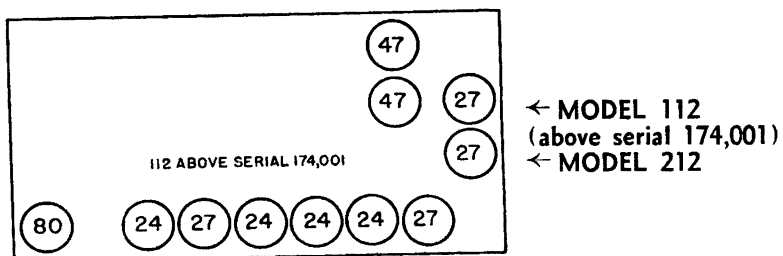
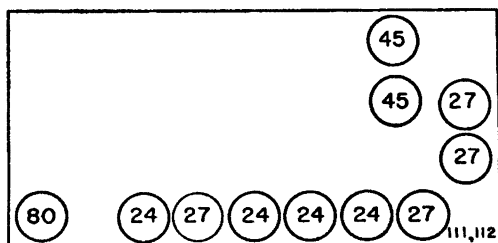


MODEL 95 →
MODEL 96 →
MODEL 296 →

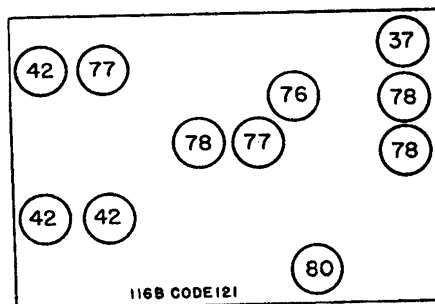
SOCKET LAYOUTS.....PHILCO MODELS 97—116B



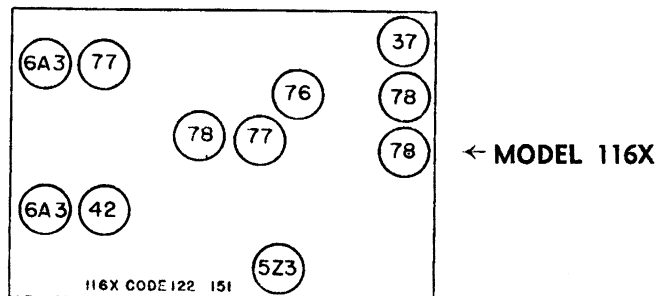
MODEL 111 →
 MODEL 112 →
 (below serial 174,001)
 MODEL 211 →



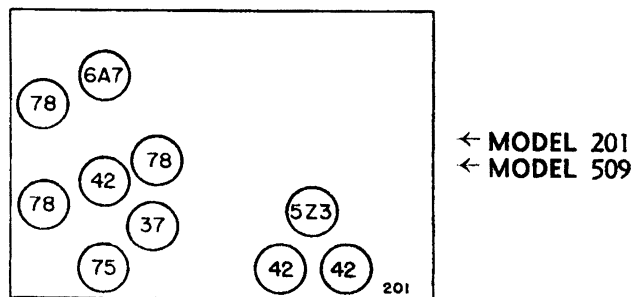
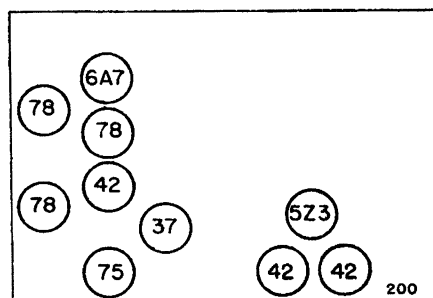
MODEL 116B →



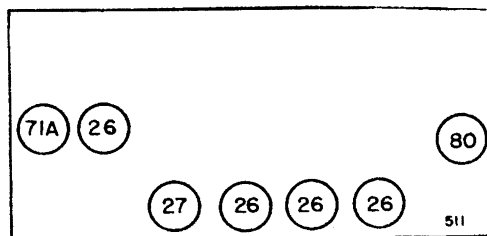
SOCKET LAYOUTS.....PHILCO MODELS 116X—511



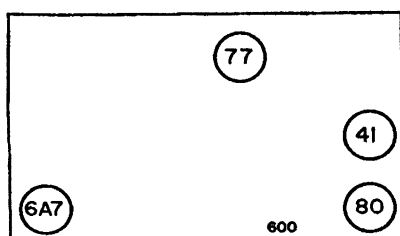
MODEL 200 →



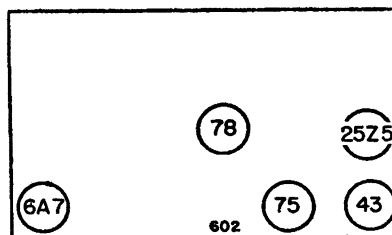
MODEL 511 →



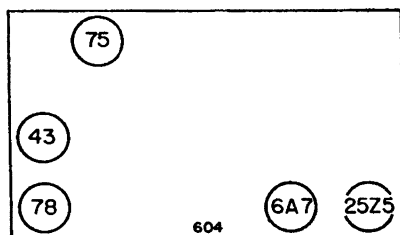
SOCKET LAYOUTS.....PHILCO MODELS 600—610



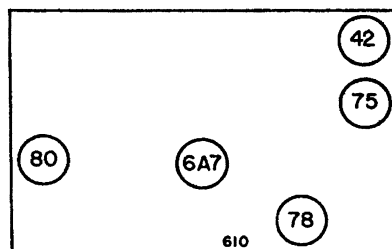
← MODEL 600



MODEL 602 →

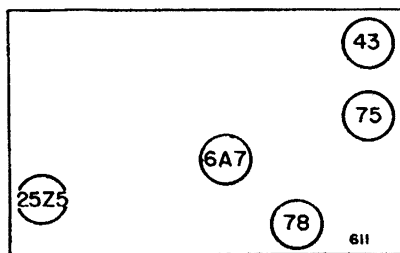


← MODEL 604



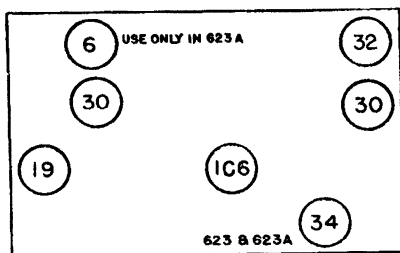
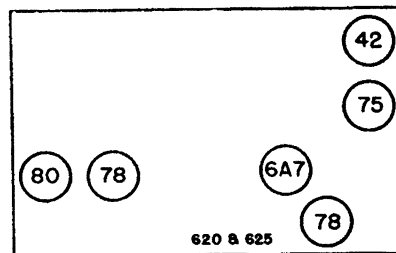
MODEL 610 →

SOCKET LAYOUTS.....PHILCO MODELS 611—624



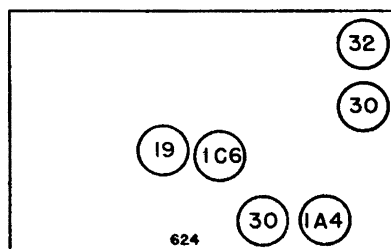
← MODEL 611

MODEL 620 →
 MODEL 625 →
 MODEL 630 →
 MODEL 635 →

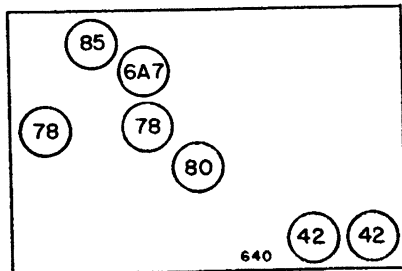


← MODEL 623
 ← MODEL 623A

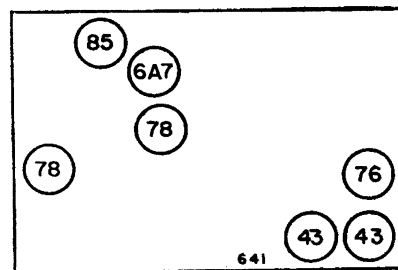
MODEL 624 →



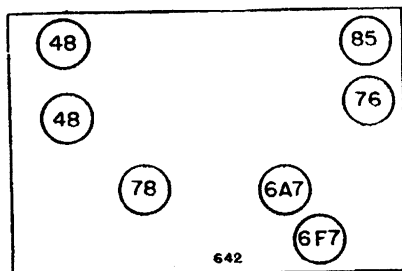
SOCKET LAYOUTS.....PHILCO MODELS 640-643



<- MODEL 640

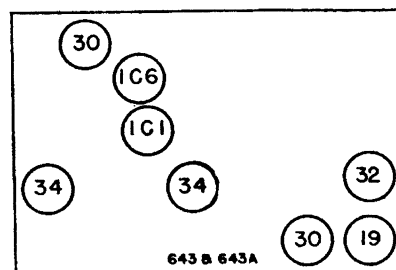


MODEL 641 ->

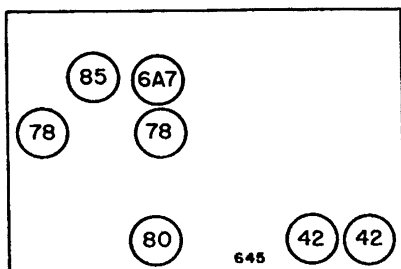


< MODEL 642

MODEL 643 ->
MODEL 643A ->
Note: The Type 1C1 tube
is used in 643A only.

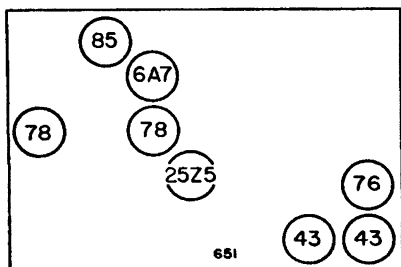
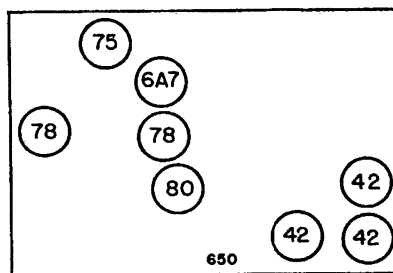


SOCKET LAYOUTS. PHILCO MODELS 645—655



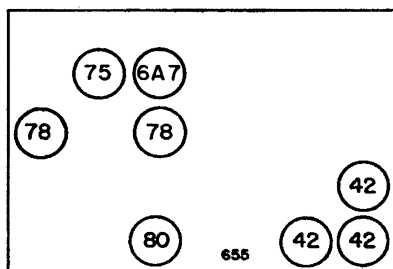
← **MODEL 645**

MODEL 650 →

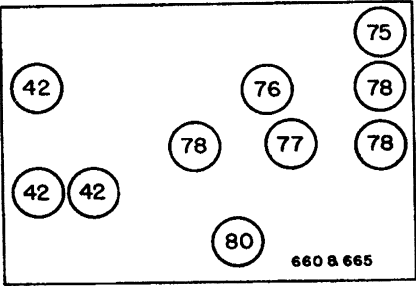


← **MODEL 651**

MODEL 655 →

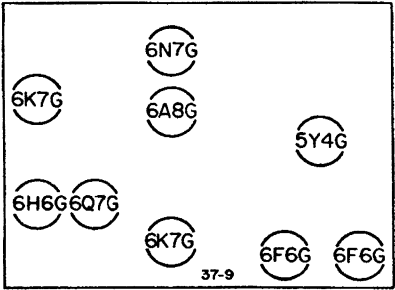
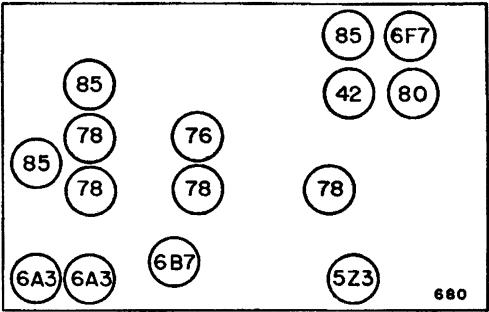


SOCKET LAYOUTS.....PHILCO MODELS 660—37-10



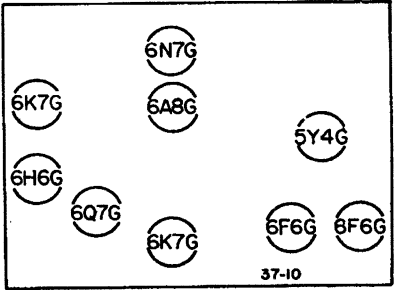
← MODEL 660
← MODEL 665

MODEL 680 →

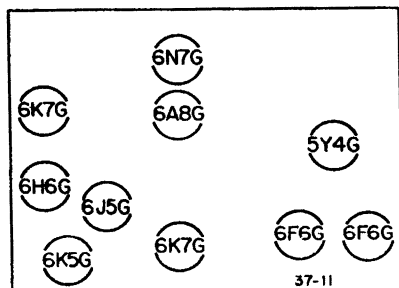


← MODEL 37-9

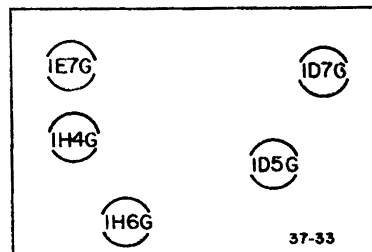
MODEL 37-10 →



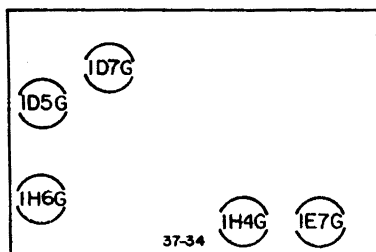
SOCKET LAYOUTS.....PHILCO MODELS 37-11—37-38



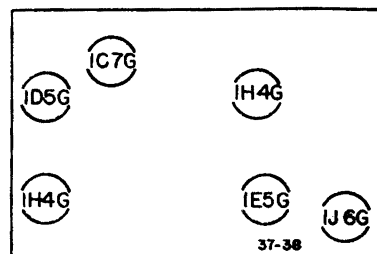
← **MODEL 37-11**



MODEL 37-33 →

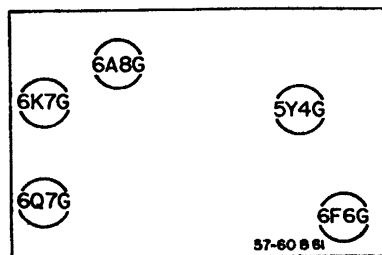


← **MODEL 37-34**
← **MODEL 38-34**
Code 121



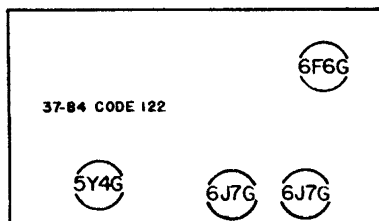
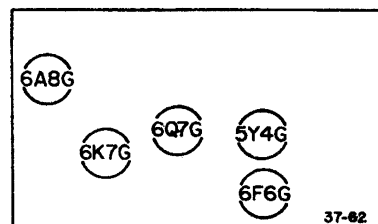
MODEL 37-38 →

SOCKET LAYOUTS.....PHILCO MODELS 37-60—37-89



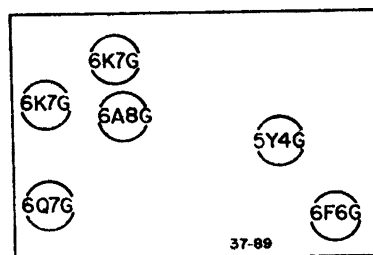
← MODEL 37-60
 ← MODEL 37-61
 ← MODEL 38-60

MODEL 37-62 →
 MODEL 38-62 →

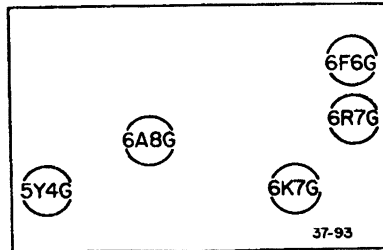


← MODEL 37-84
 Code 122

MODEL 37-89 →
 MODEL 38-89 →
 Code 121

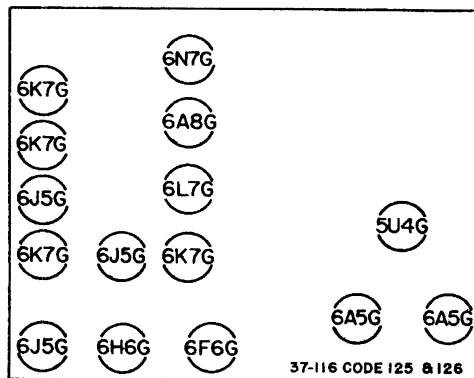
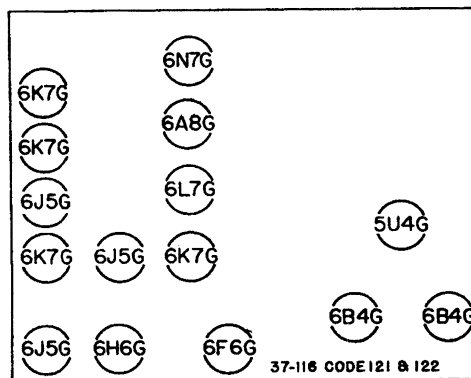


SOCKET LAYOUTS.....PHILCO MODELS 37-93—37-116



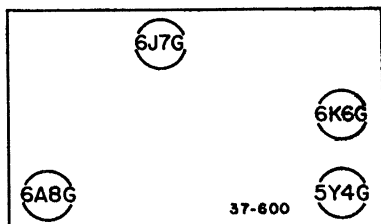
← MODEL 37-93
← MODEL 38-93

MODEL 37-116 →
Code 121
Code 122

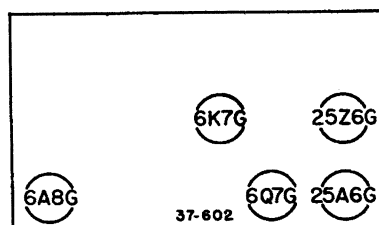


← MODEL 37-116
Code 125
Code 126

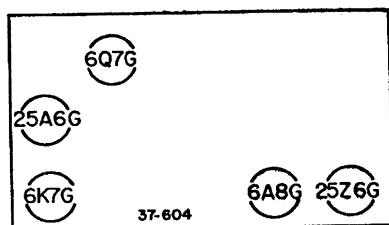
SOCKET LAYOUTS.....PHILCO MODELS 37-600—37-610



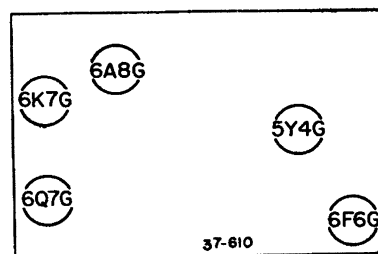
← MODEL 37-600



MODEL 37-602 →

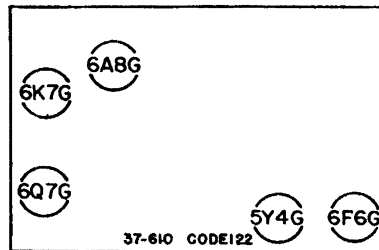


← MODEL 37-604



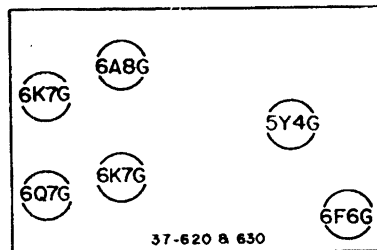
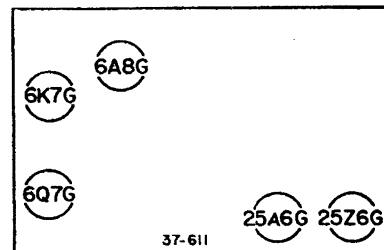
MODEL 37-610 →
Code 121 & 125
MODEL 38-610 →

SOCKET LAYOUTS.....PHILCO MODELS 37-610—37-623



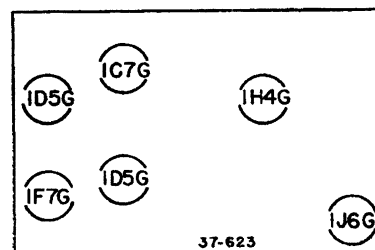
← **MODEL 37-610**
Code 122
Code 126

MODEL 37-611 →

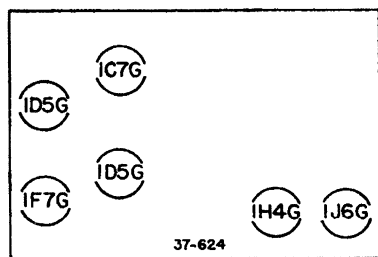


← **MODEL 37-620**
← **MODEL 37-630**
Code 121
← **MODEL 38-620**
← **MODEL 38-630**

MODEL 37-623 →
MODEL 38-623 →

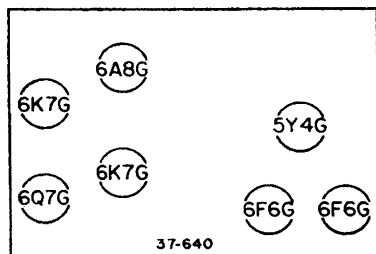
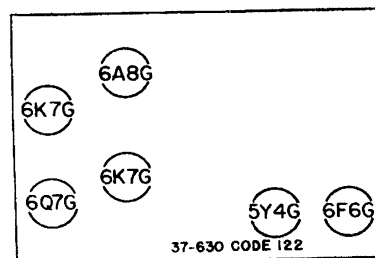


SOCKET LAYOUTS.....PHILCO MODELS 37-624—37-641



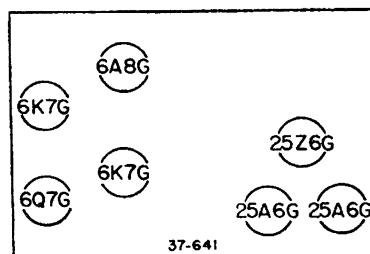
← **MODEL 37-624**
 ← **MODEL 38-624**

MODEL 37-630 →
Code 122

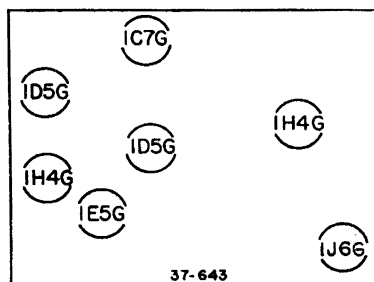


← **MODEL 37-640**
 ← **MODEL 38-640**

MODEL 37-641 →
MODEL 38-641 →

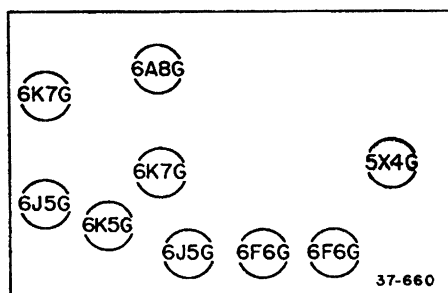
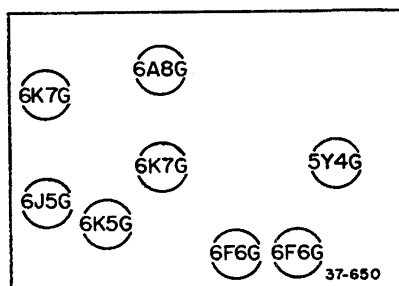


SOCKET LAYOUTS.....PHILCO MODELS 37-643—37-665



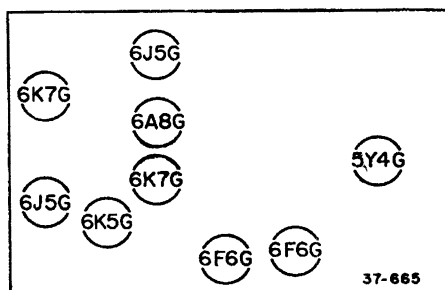
← **MODEL 37-643**
← **MODEL 38-643**

MODEL 37-650 →

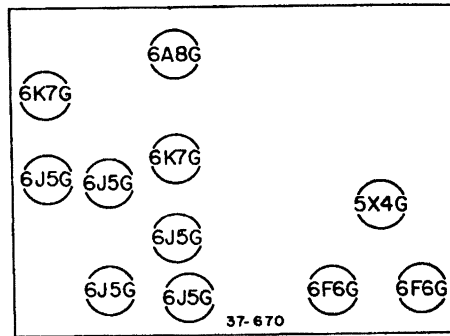


← **MODEL 37-660**

MODEL 37-665 →
MODEL 38-665 →

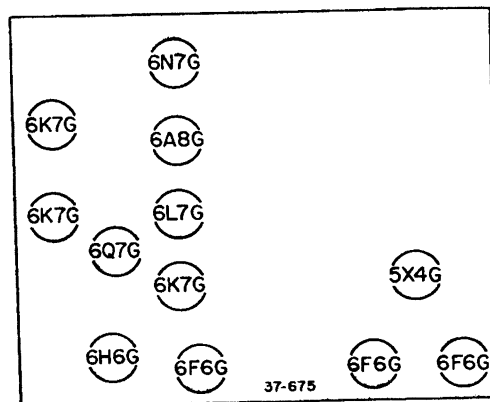


SOCKET LAYOUTS.....PHILCO MODELS 37-670—37-675

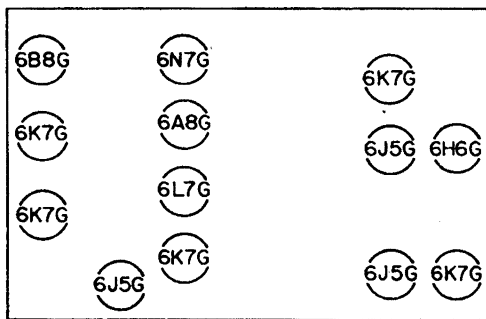


← **MODEL 37-670**

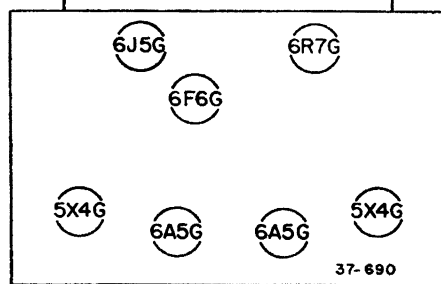
MODEL 37-675 →



SOCKET LAYOUTS PHILCO MODELS 37-690



← **MODEL 37-690**



37-690